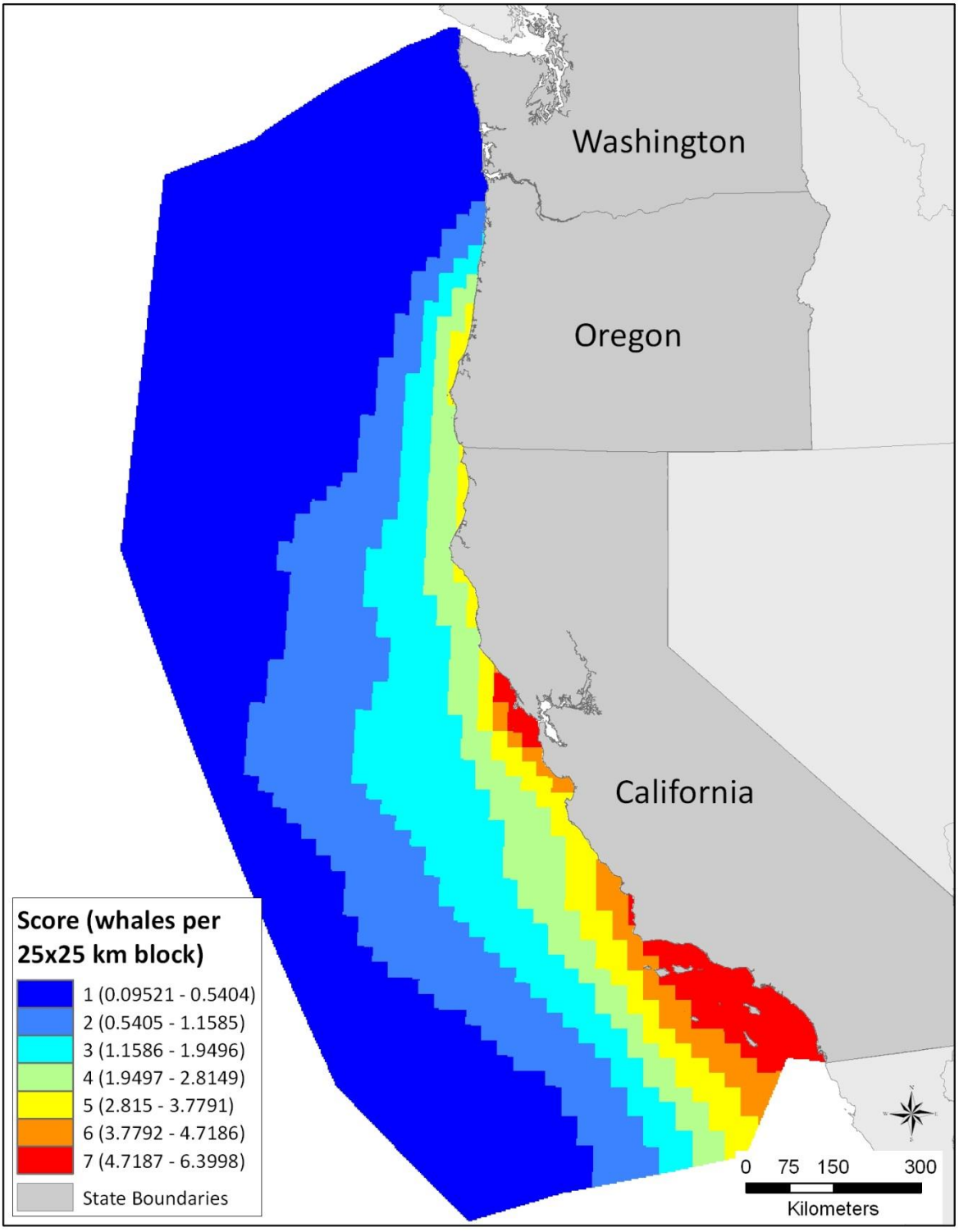

Figure 1 Whale density surface map for blue whales for July to November (Becker *et al.*, in prep). The unique density values for have been scaled from 1-to-7 shown from blue to red, with red representing the highest density for that species. Note the density values associated with the scaled values in the legend.

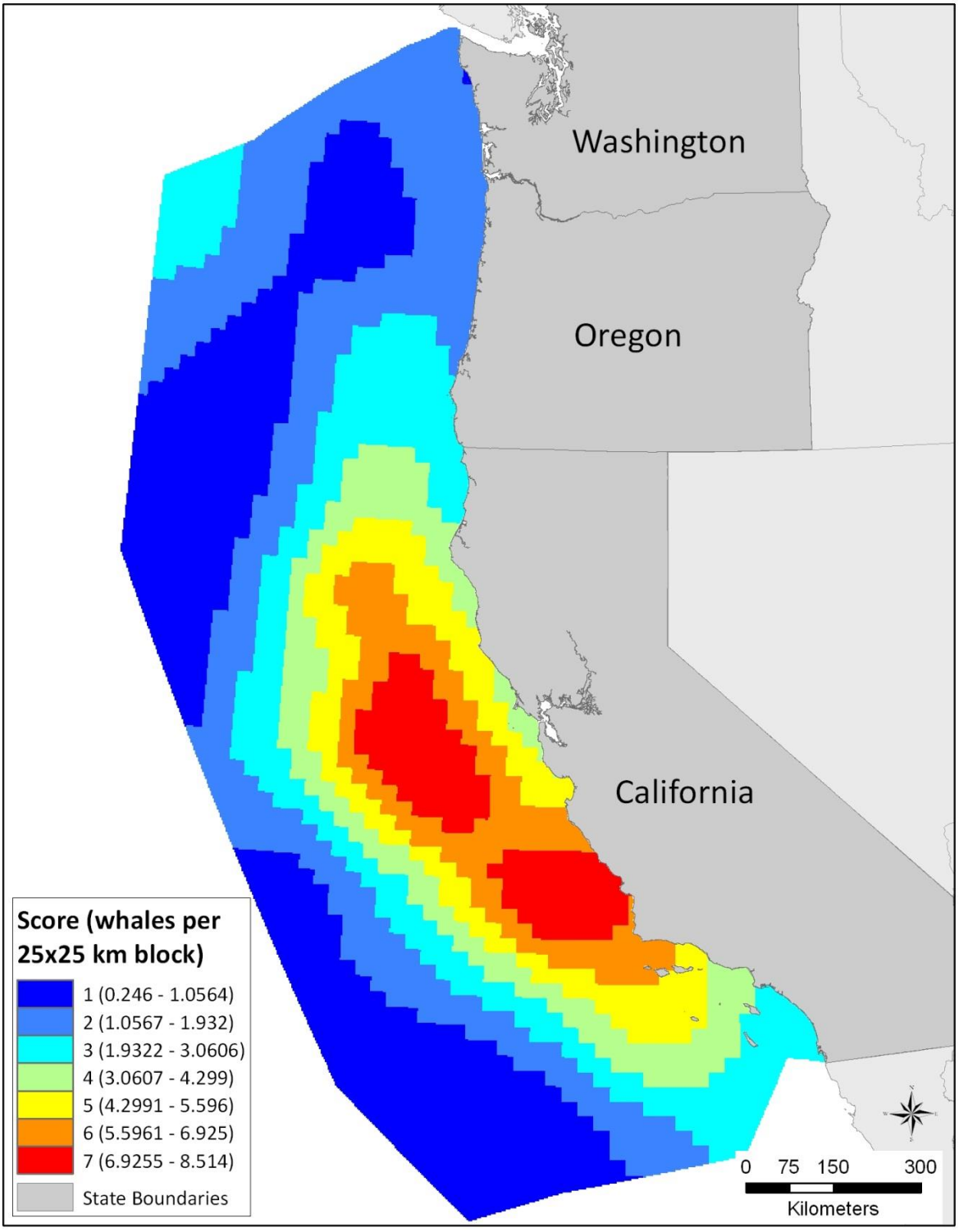

Figure 2 Whale density surface map for fin whales for July to November (Becker *et al.*, in prep). The unique density values have been scaled from 1-to-7 shown from blue to red, with red representing the highest density for that species. Note the density values associated with the scaled values in the legend.

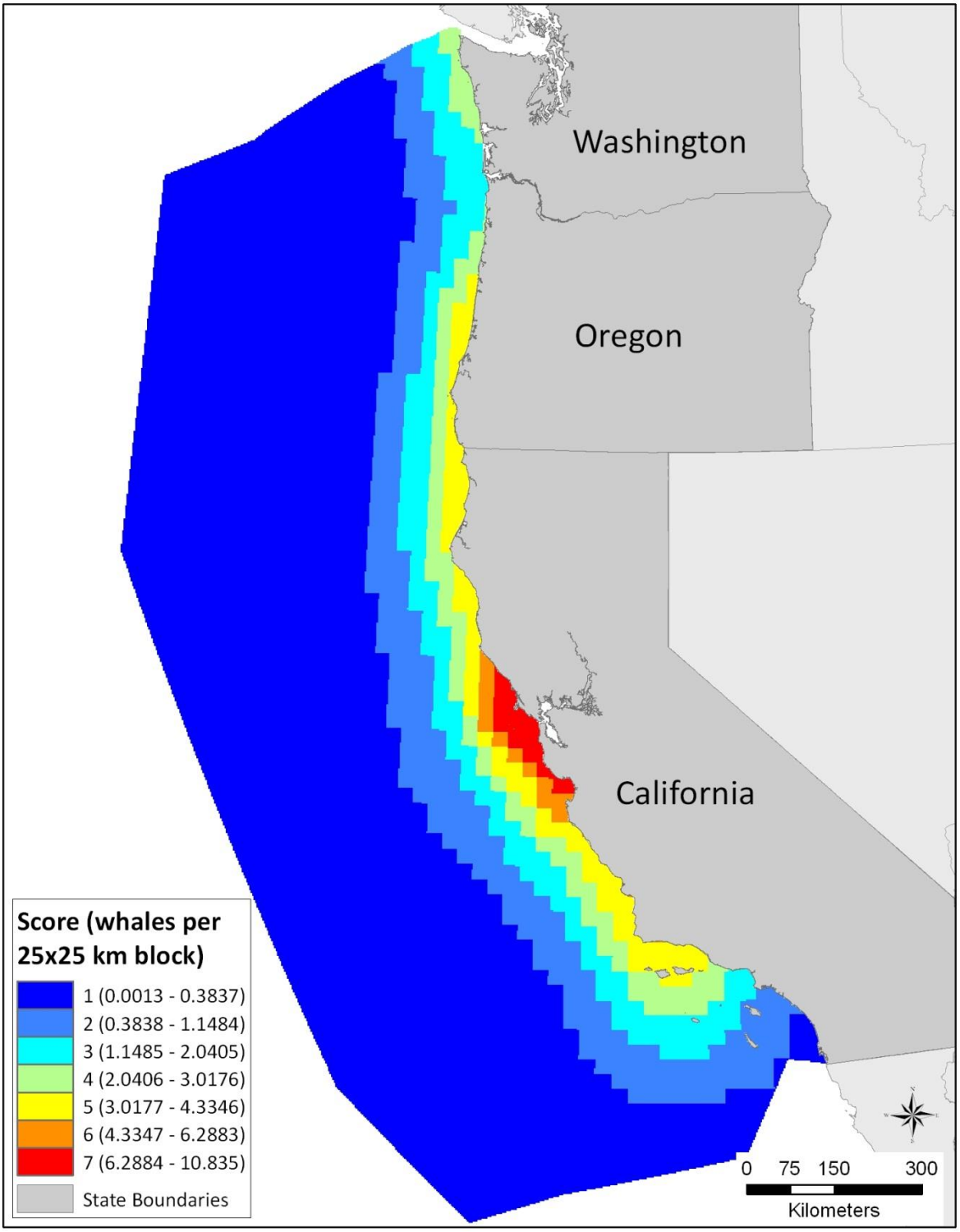

Figure 3 Whale density surface map for humpback whales for July to November (Becker *et al.*, in prep). The unique density values have been scaled from 1-to-7 shown from blue to red, with red representing the highest density for that species. Note the density values associated with the scaled values in the legend.

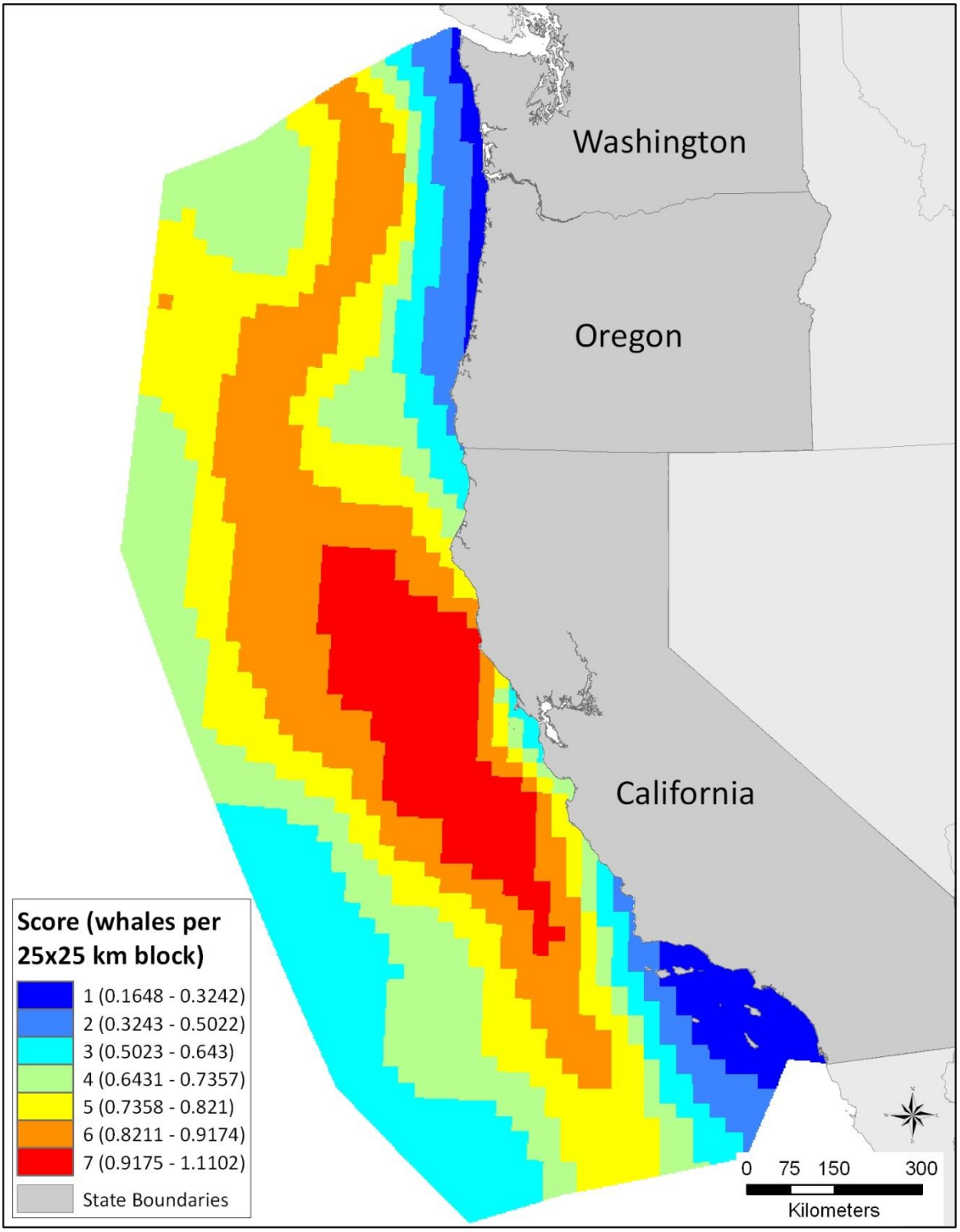

Figure 4 Whale density surface map for sperm whales for July to November (Becker *et al.*, in prep). The unique density values have been scaled from 1-to-7 shown from blue to red, with red representing the highest density for that species. Note the density values associated with the scaled values in the legend.

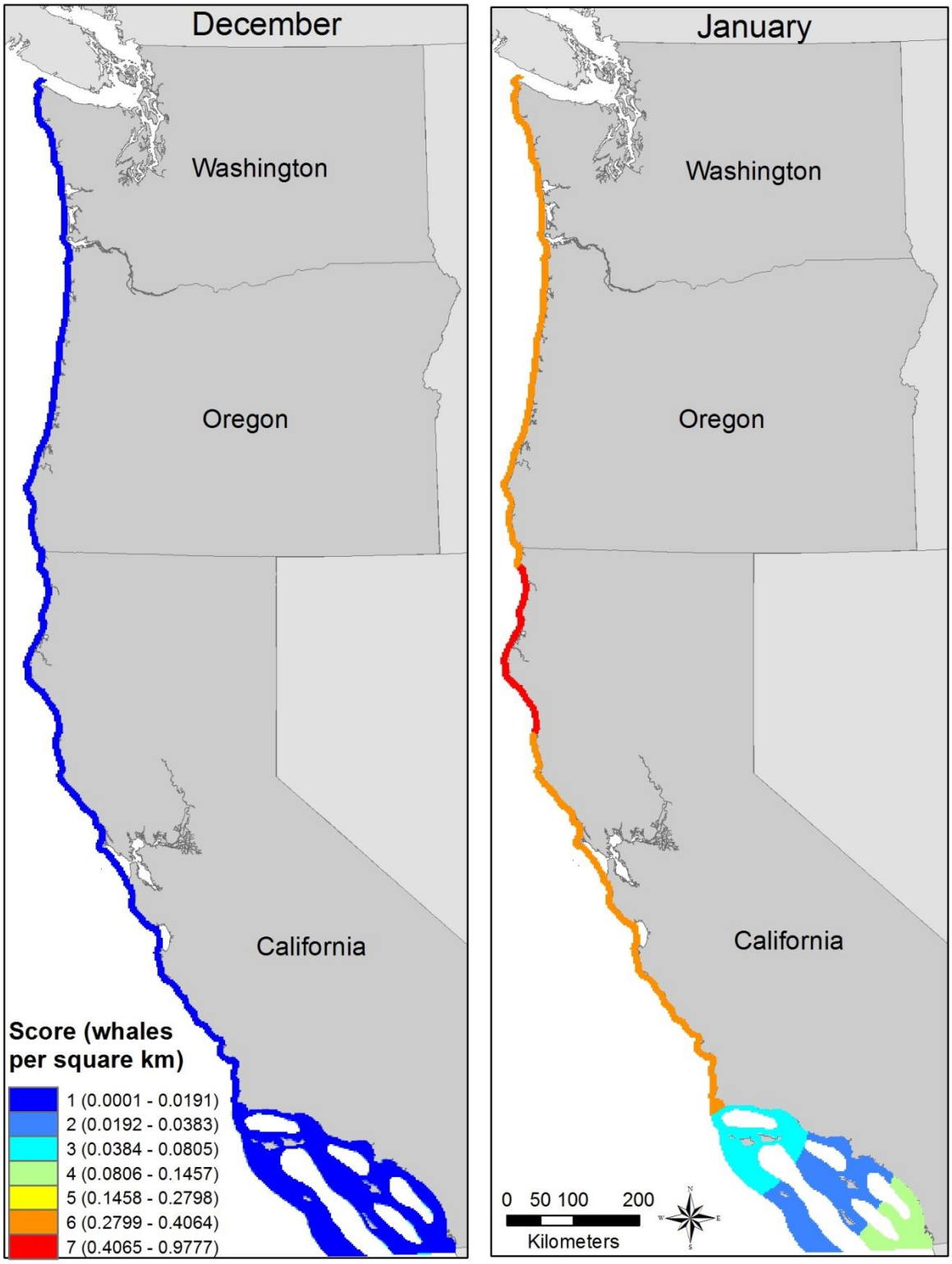

Figure 5 Gray whale migration model maps showing average whale density per month for December and January. Monthly average densities of gray whales are represented using a 1-to-7 scale ranging from blue to red. Blue = 1 (low density) and Red = 7 (high density).

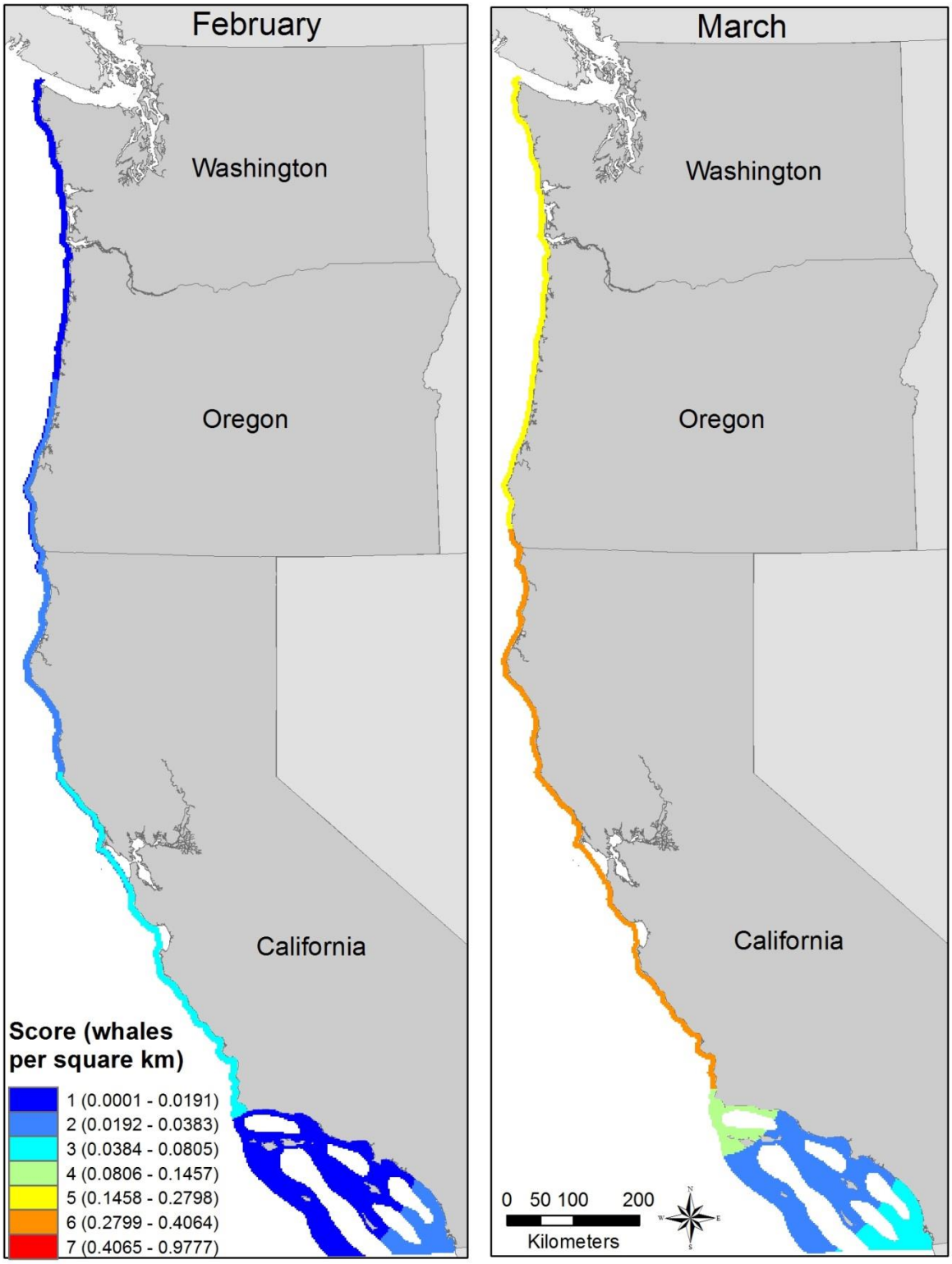

Figure 6 Gray whale migration model maps showing average whale density per month for February and March. Monthly average densities of gray whales are represented using a 1-to-7 scale ranging from blue to red. Blue = 1 (low density) and Red = 7 (high density).

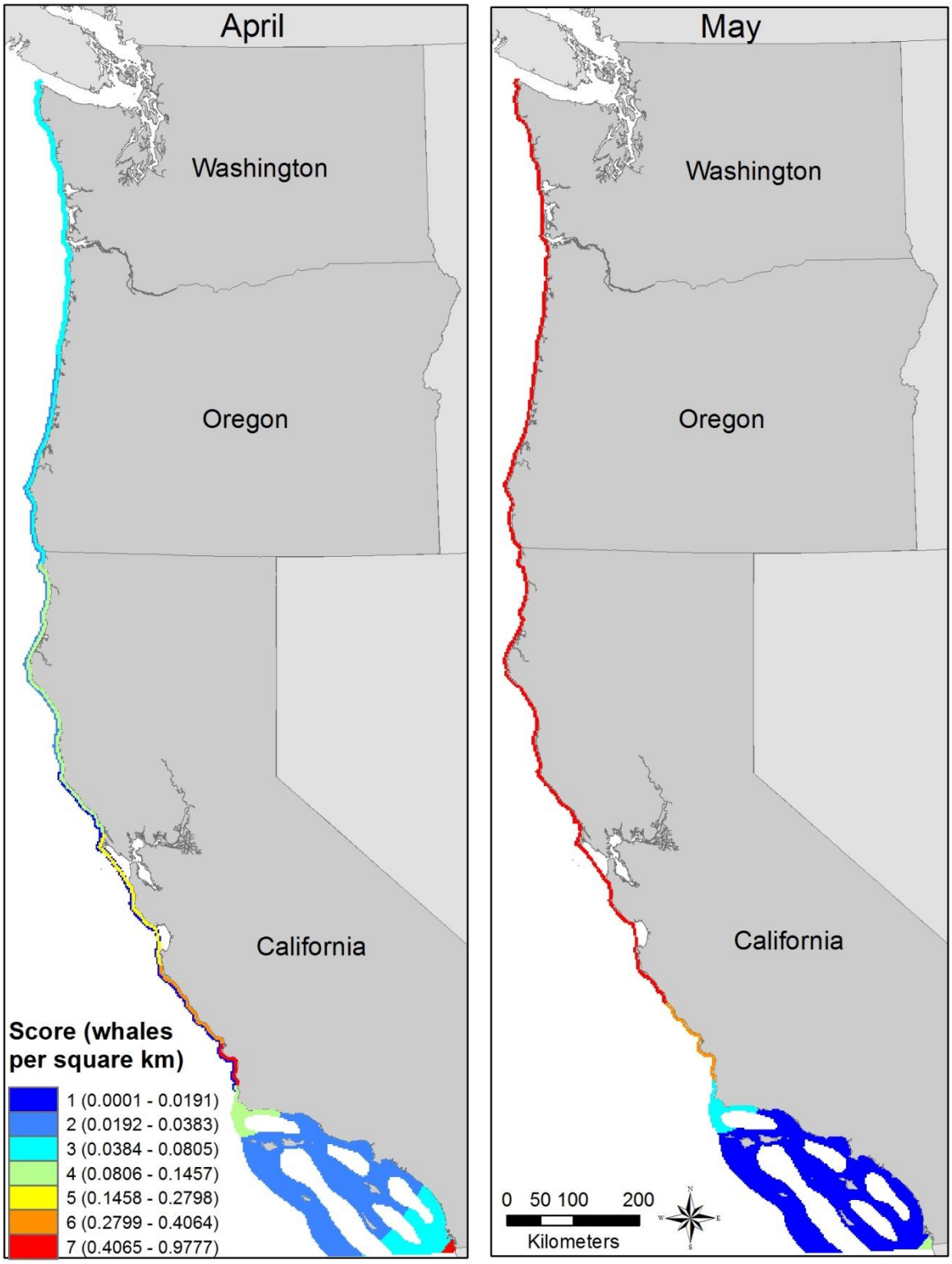

Figure 7 Gray whale migration model maps showing average whale density per month for April and May. Monthly average densities of gray whales are represented using a 1-to-7 scale ranging from blue to red. Blue = 1 (low density) and Red = 7 (high density).

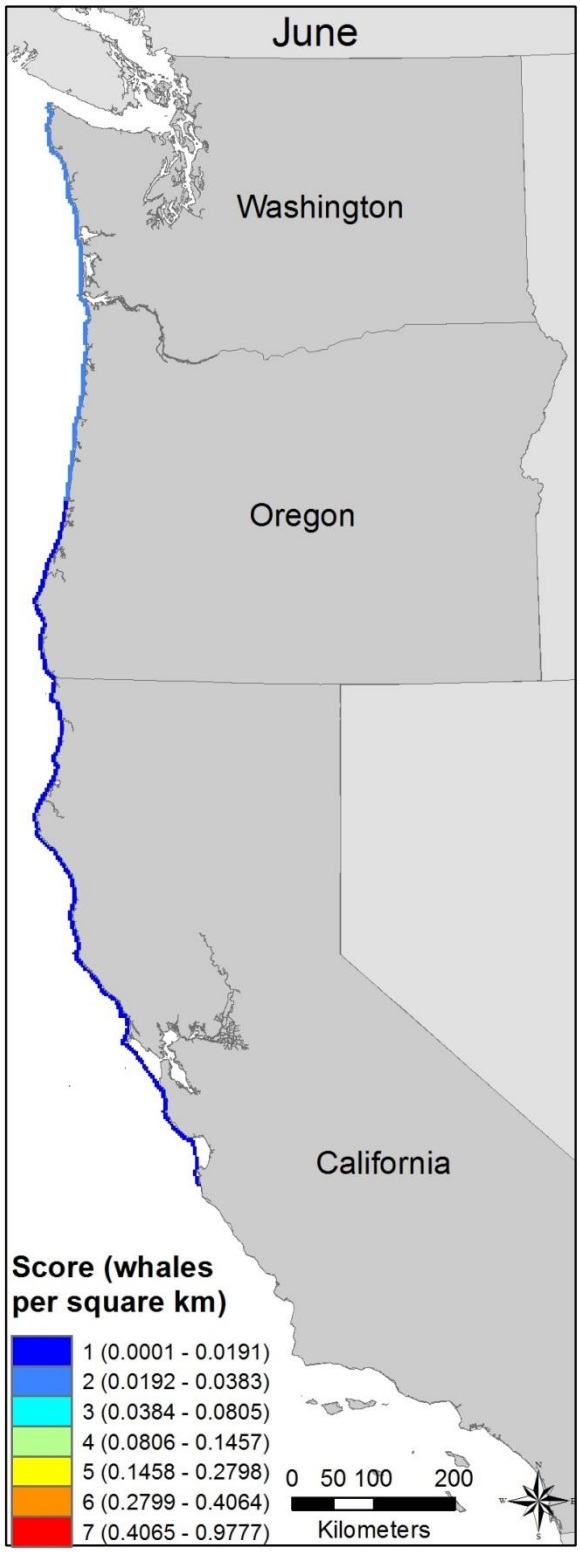

Figure 8 Gray whale migration model maps showing average whale density per month for June. Monthly average densities of gray whales are represented using a 1-to-7 scale ranging from blue to red. Blue = 1 (low density) and Red = 7 (high density).

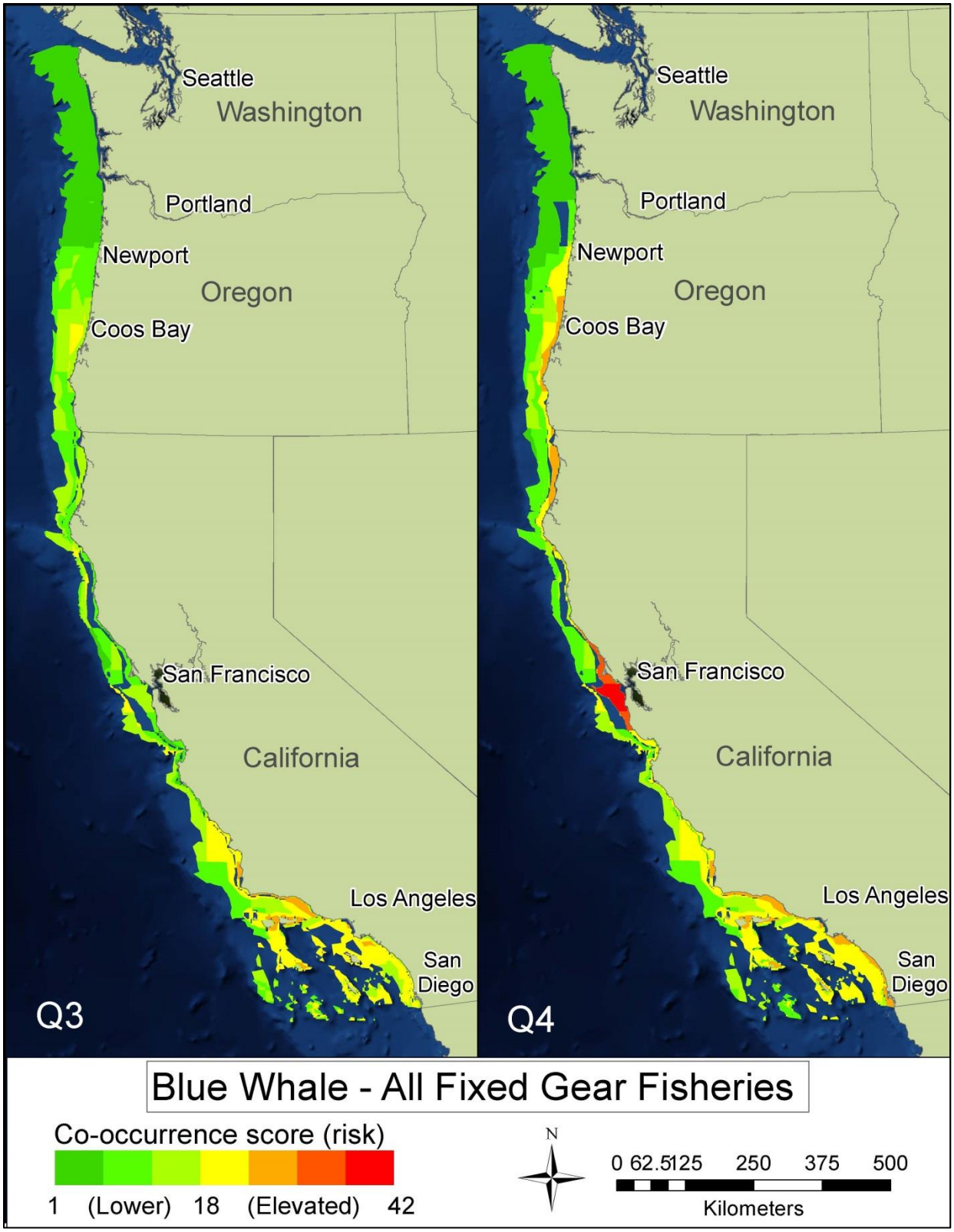

Figure 9 Co-occurrence of blue whale density and fishing effort for all 11 fixed gear fisheries, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

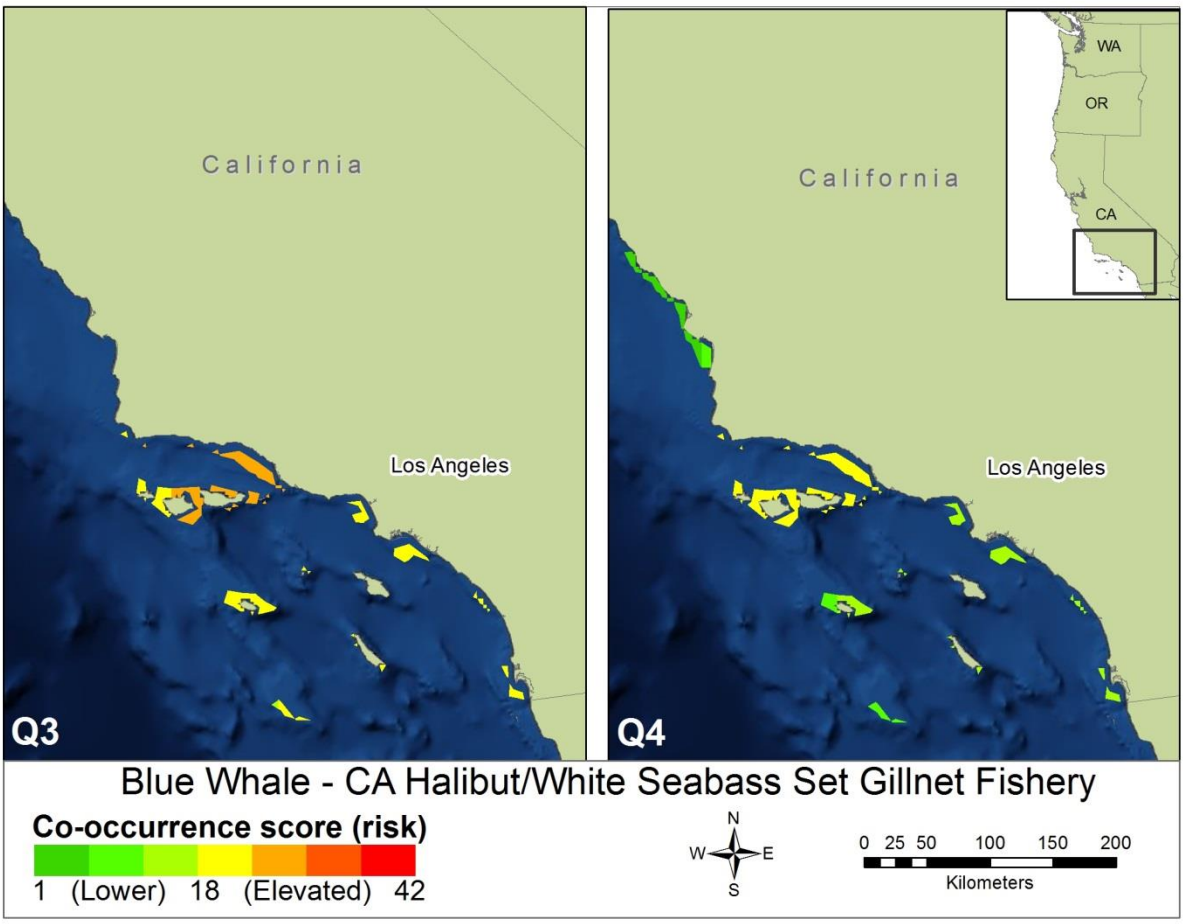

Figure 10 Co-occurrence of blue whale density and California halibut/white seabass set gillnet effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

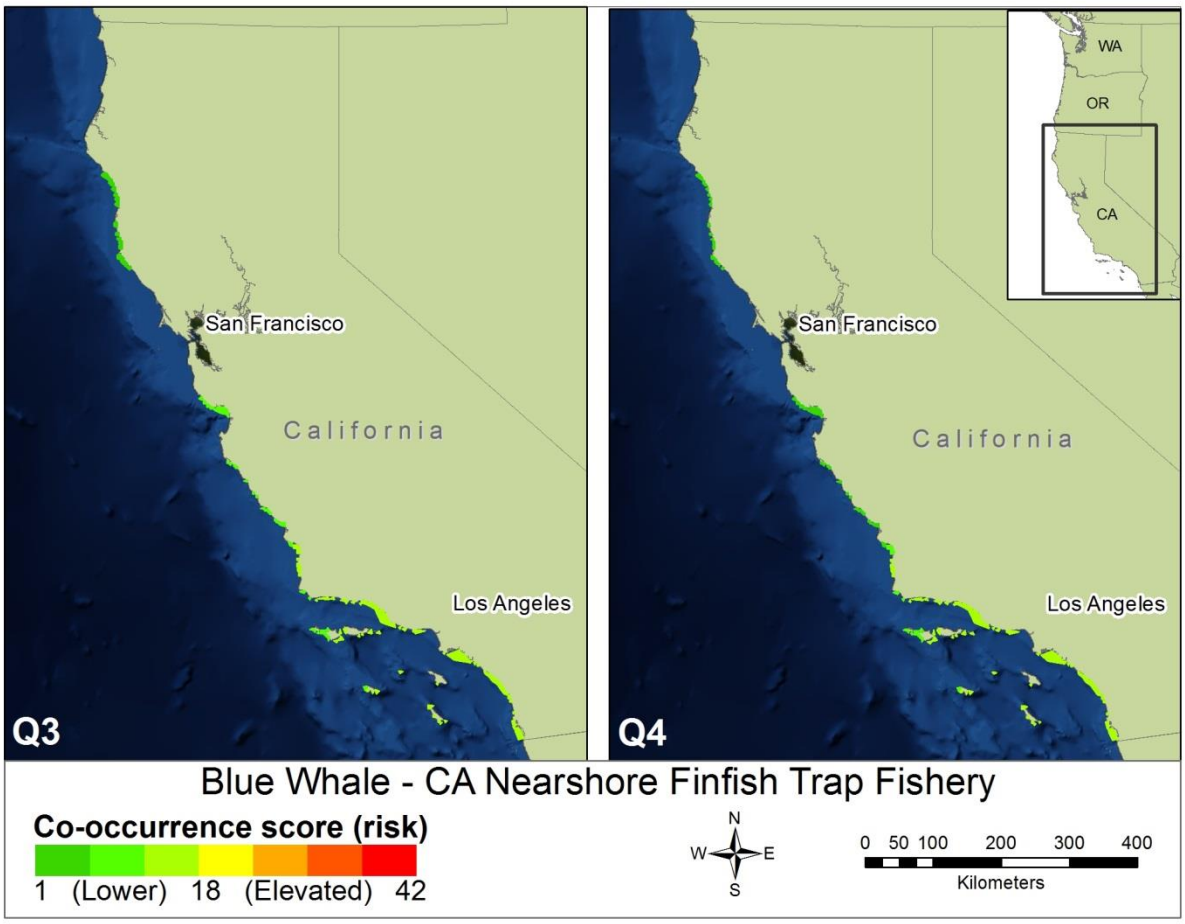

Figure 11 Co-occurrence of blue whale density and California nearshore live finfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

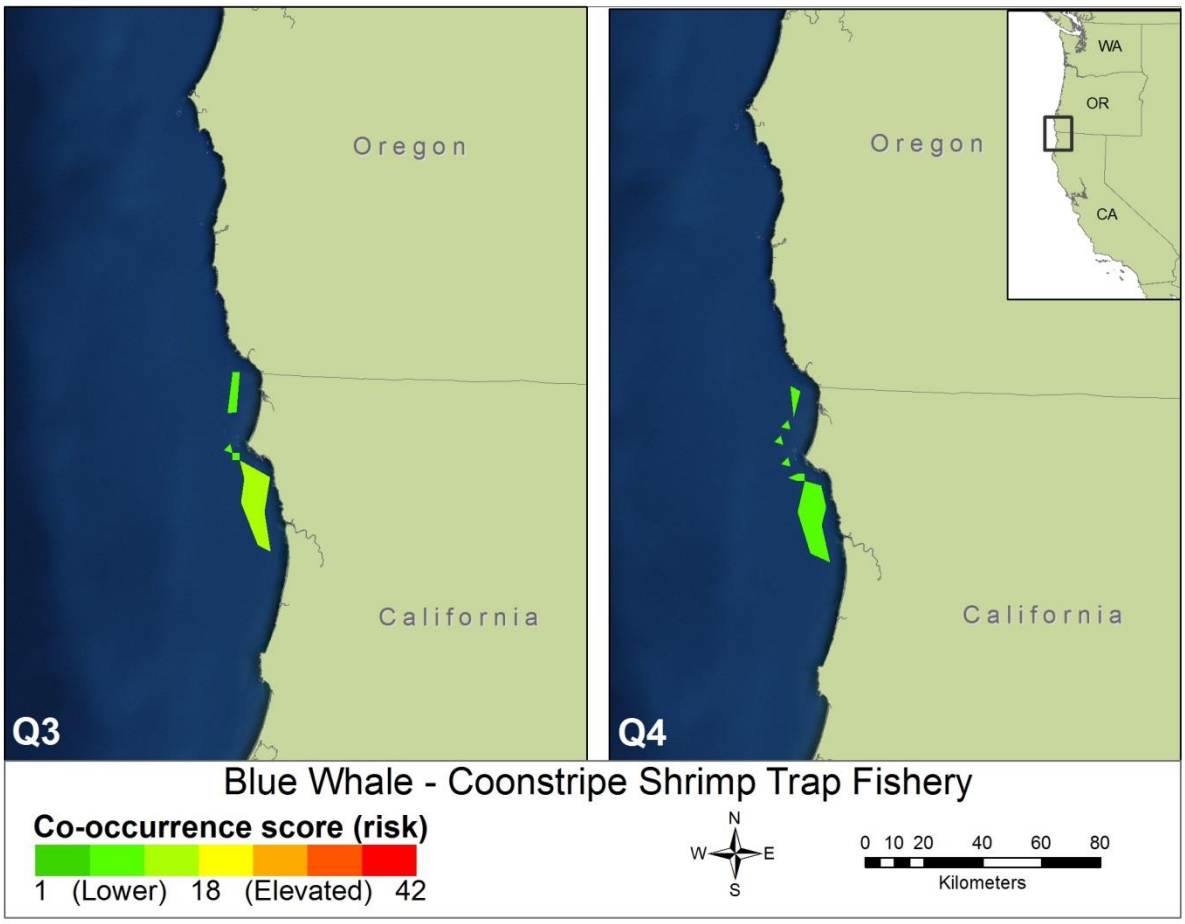

Figure 12 Co-occurrence of blue whale density and coonstripe shrimp trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

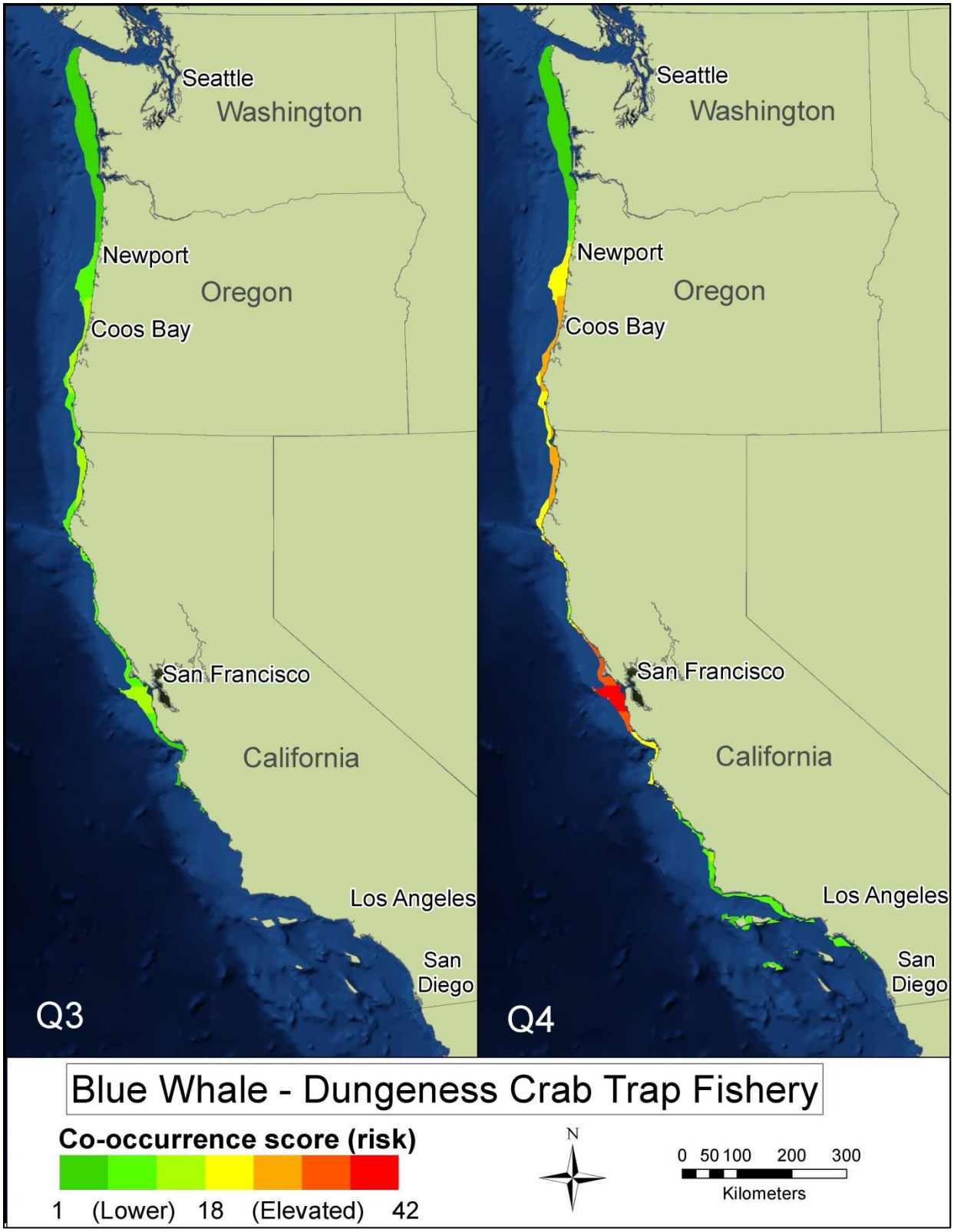

Figure 13 Co-occurrence of blue whale density and Dungeness crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

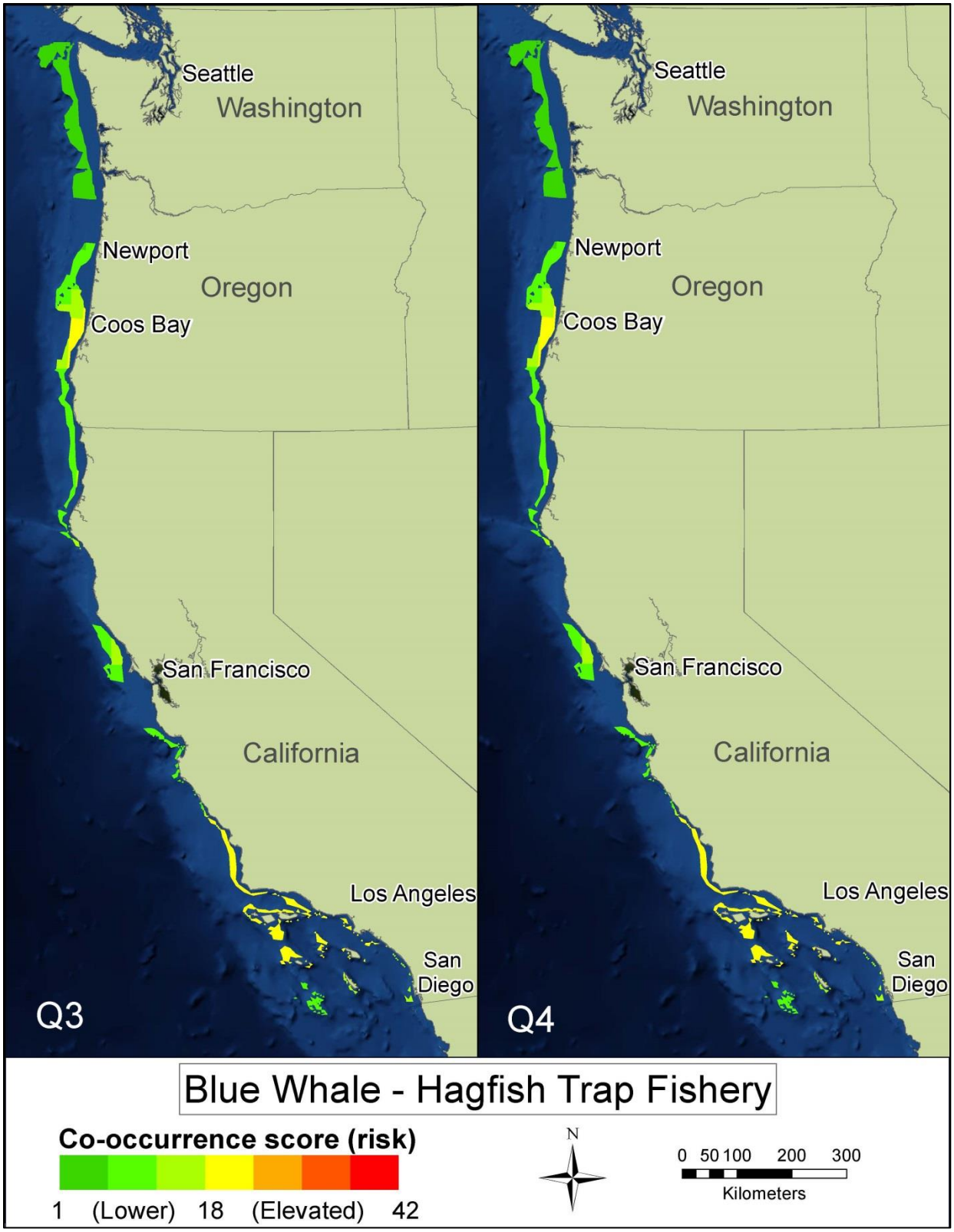

Figure 14 Co-occurrence of blue whale density and hagfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

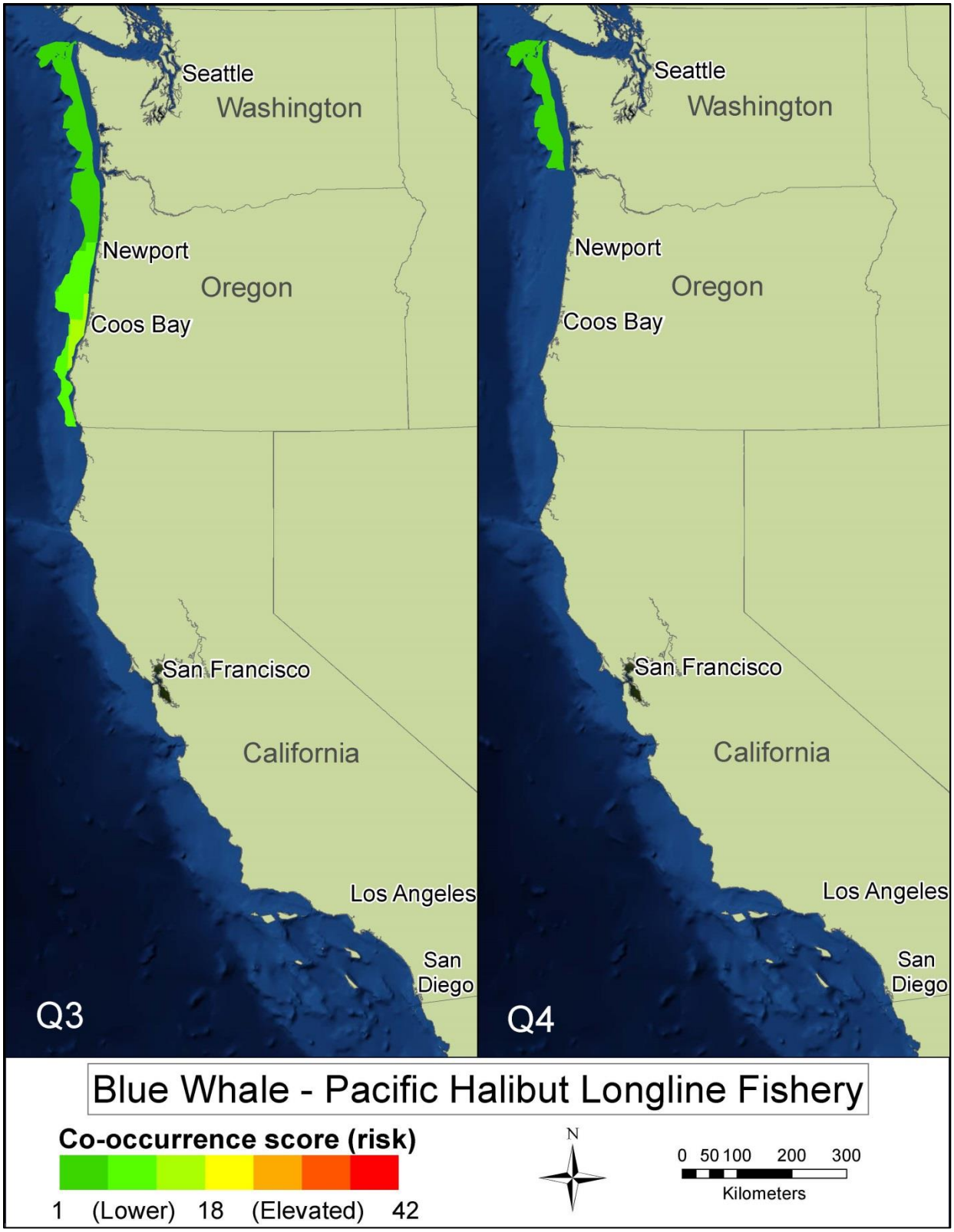

Figure 15 Co-occurrence of blue whale density and Pacific halibut longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

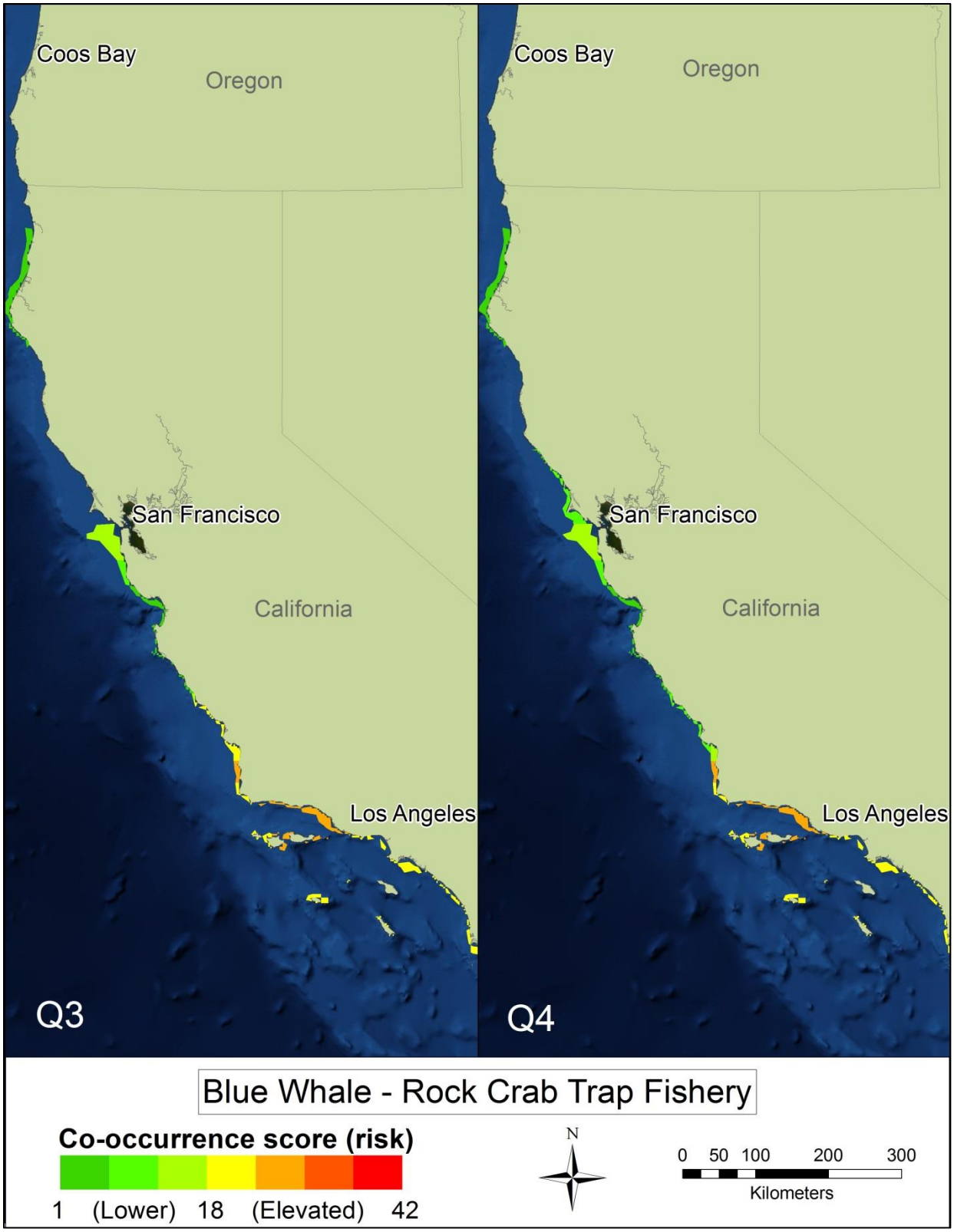

Figure 16 Co-occurrence of blue whale density and rock crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

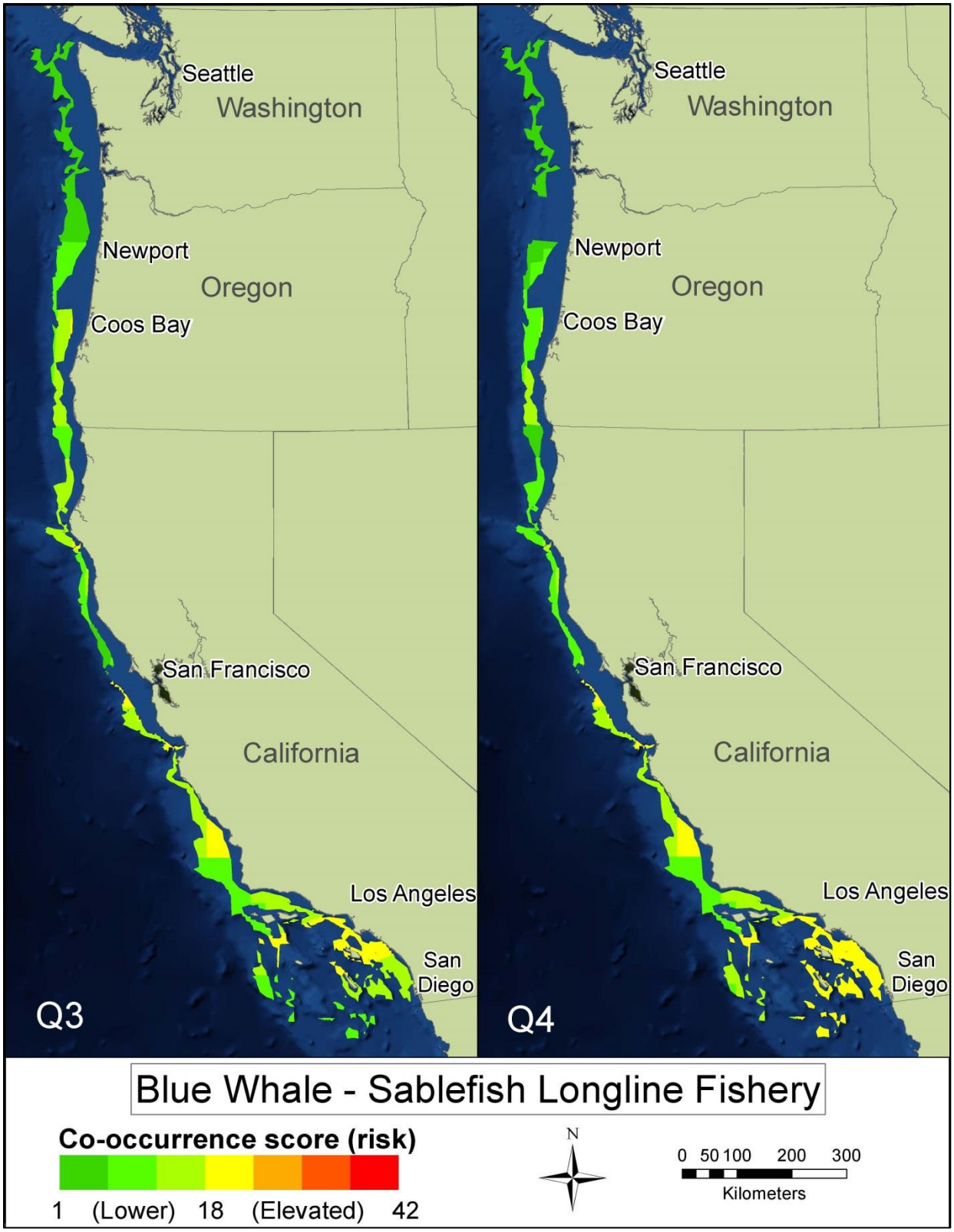

Figure 17 Co-occurrence of blue whale density and sablefish longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

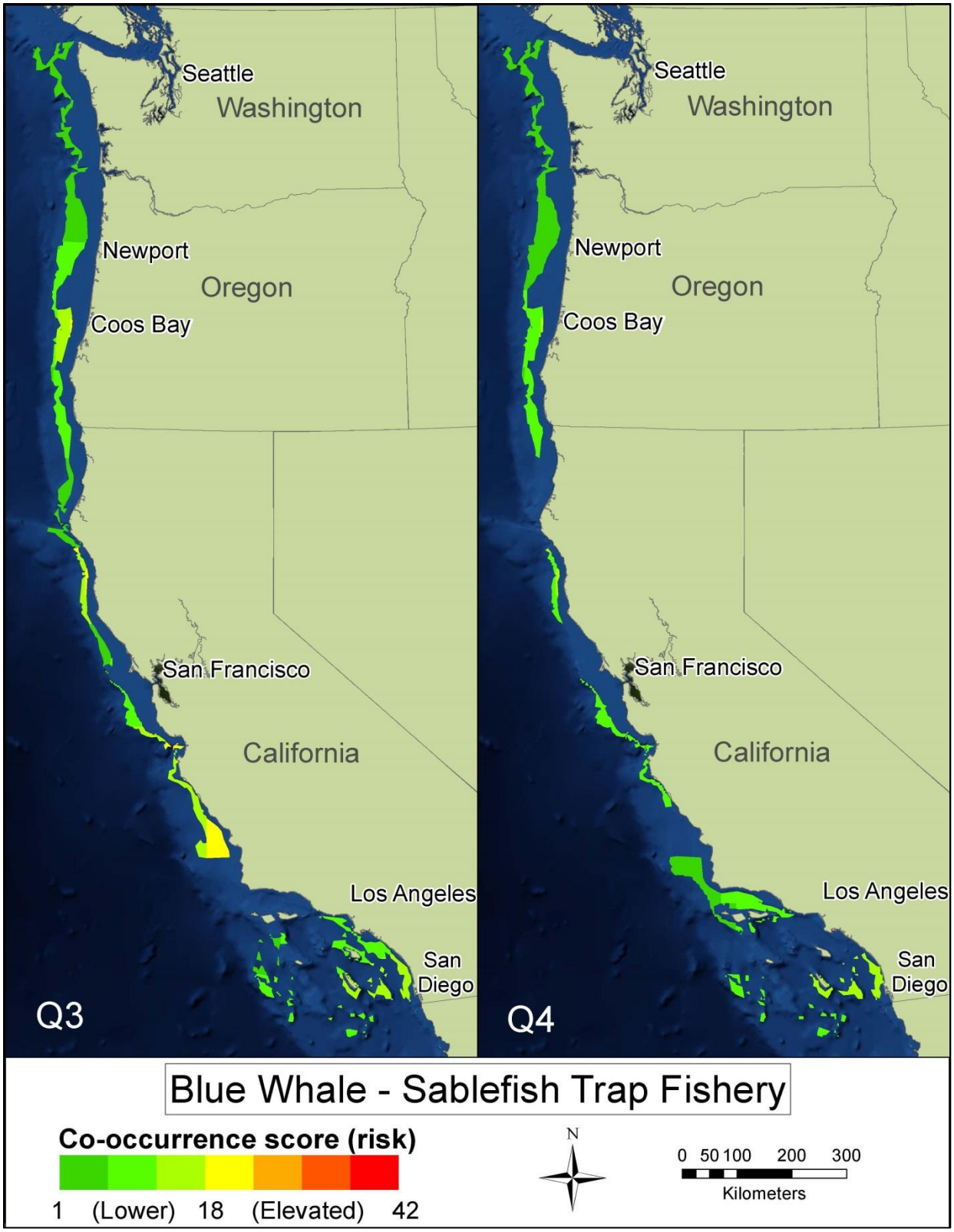

Figure 18 Co-occurrence of blue whale density and sablefish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

Figure 19 Co-occurrence of blue whale density and spiny lobster trap effort, shown for Quarter Three and Four. The spiny lobster trap fishery is closed in Quarter Three. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

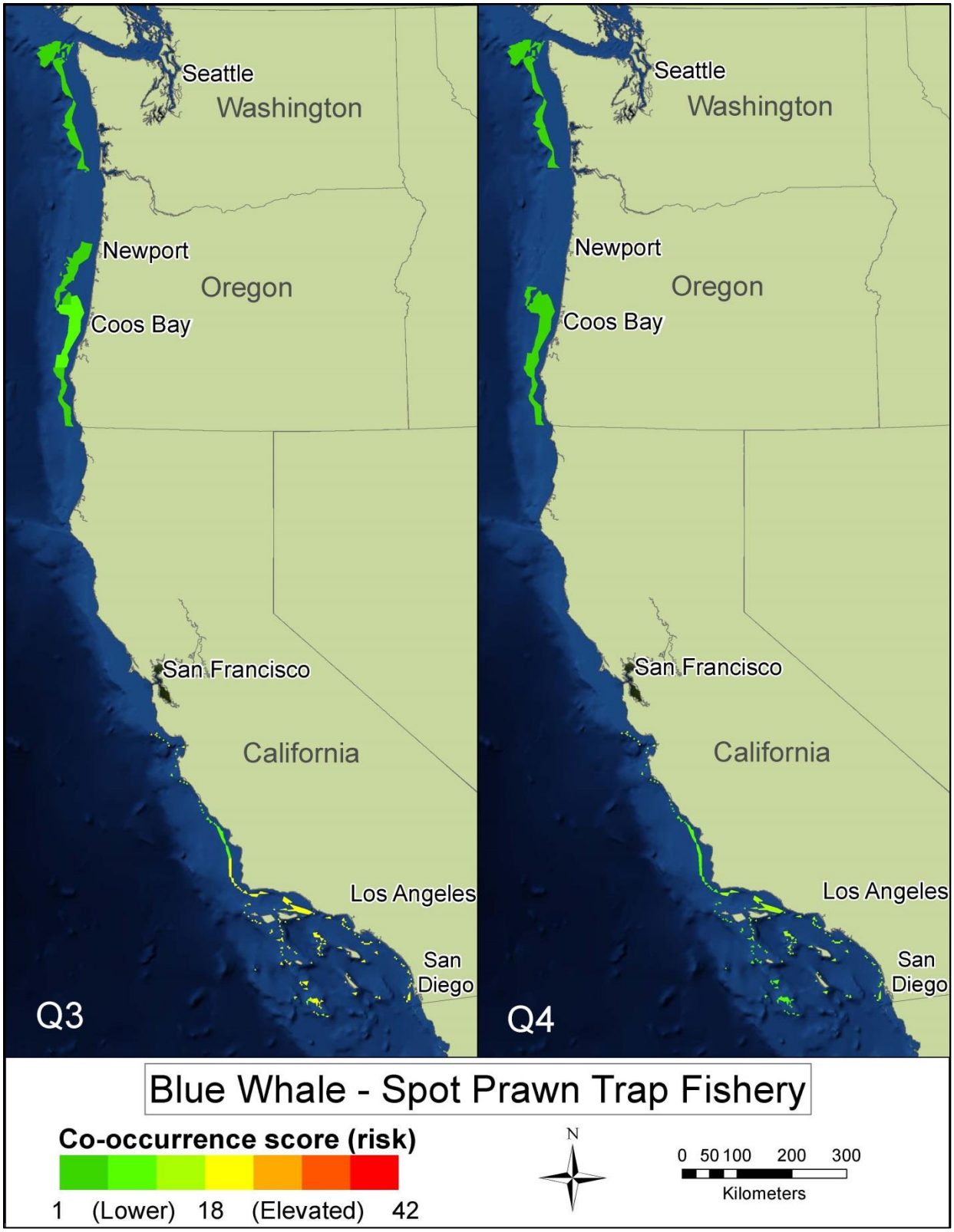

Figure 20 Co-occurrence of blue whale density and spot prawn trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

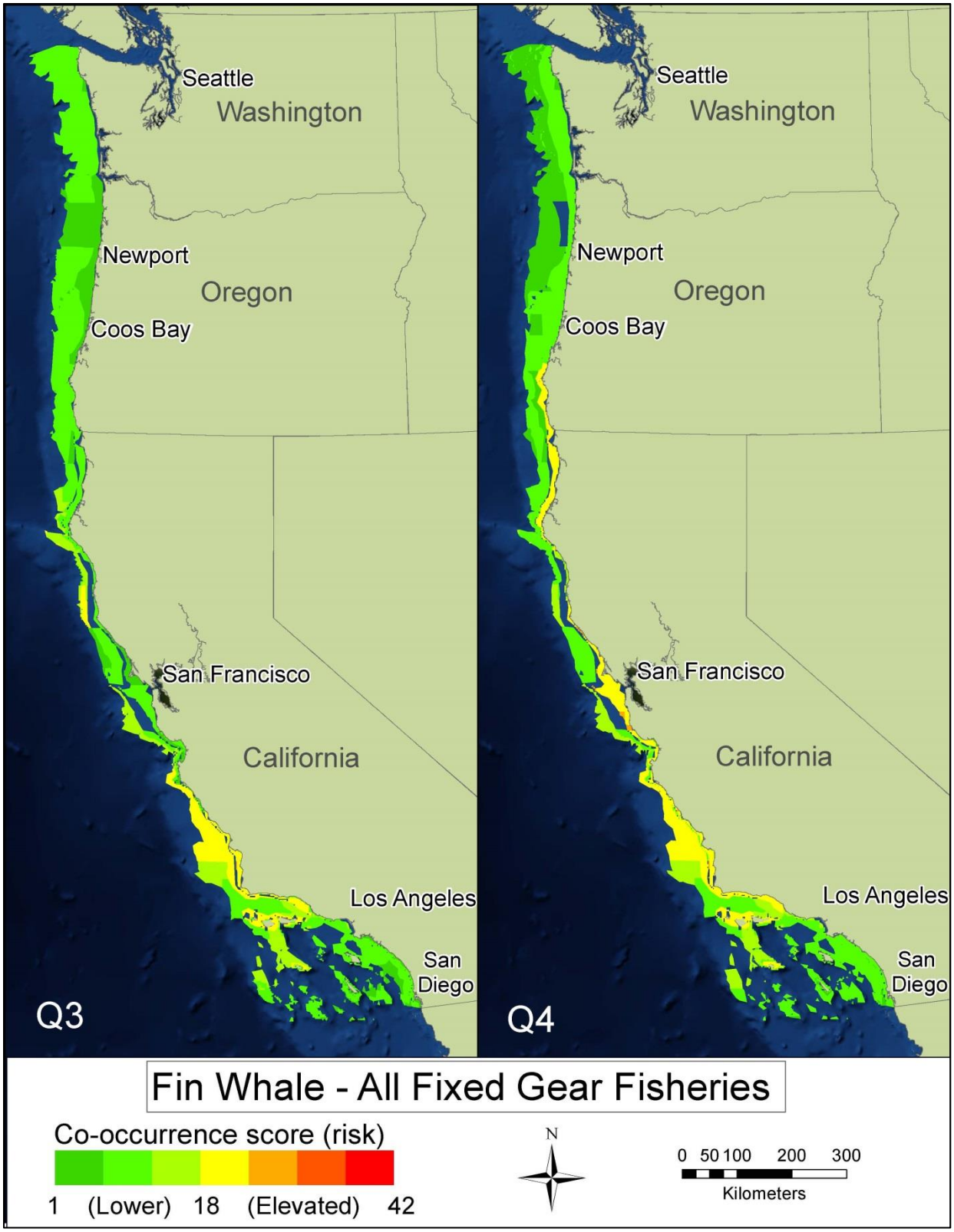

Figure 21 Co-occurrence of fin whale density and fishing effort for all 11 fixed gear fisheries, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

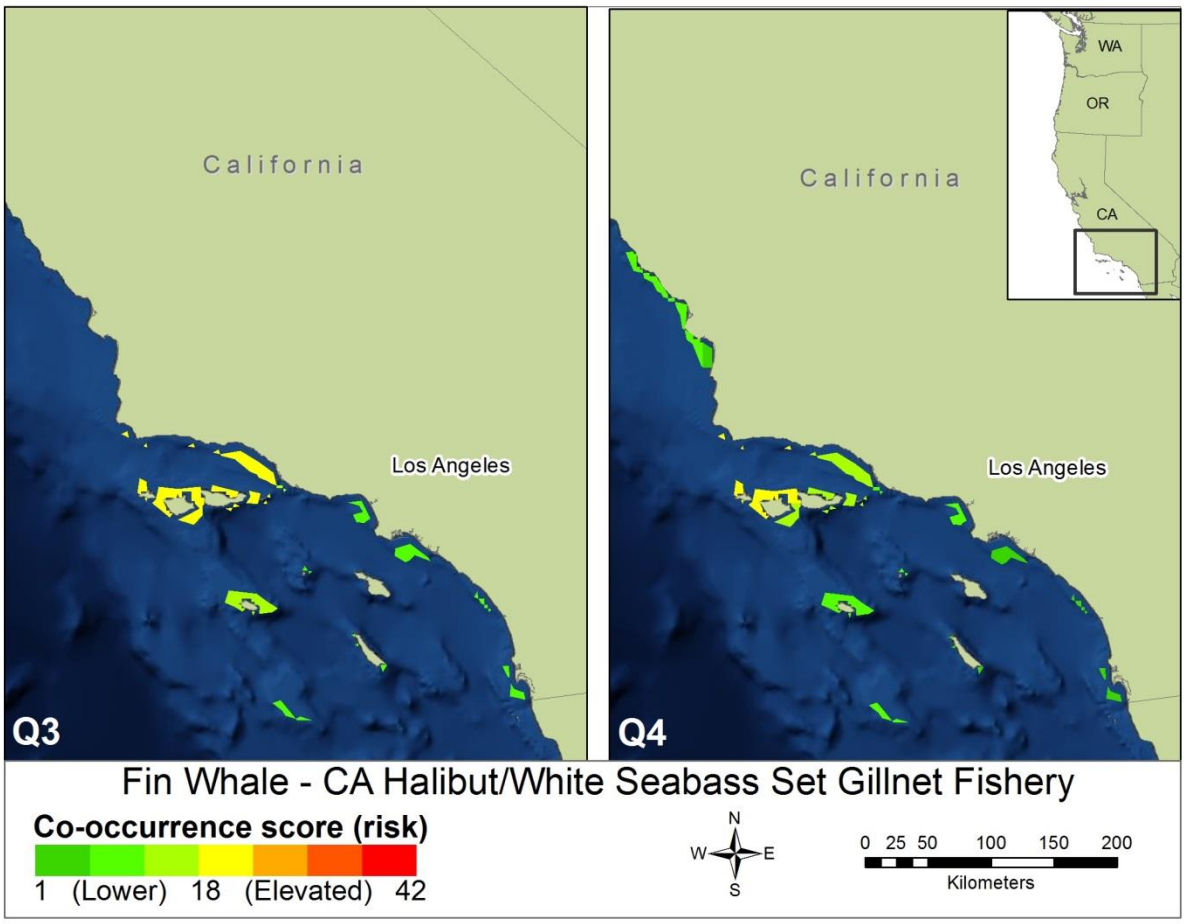

Figure 22 Co-occurrence of fin whale density and California halibut/white seabass set gillnet effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

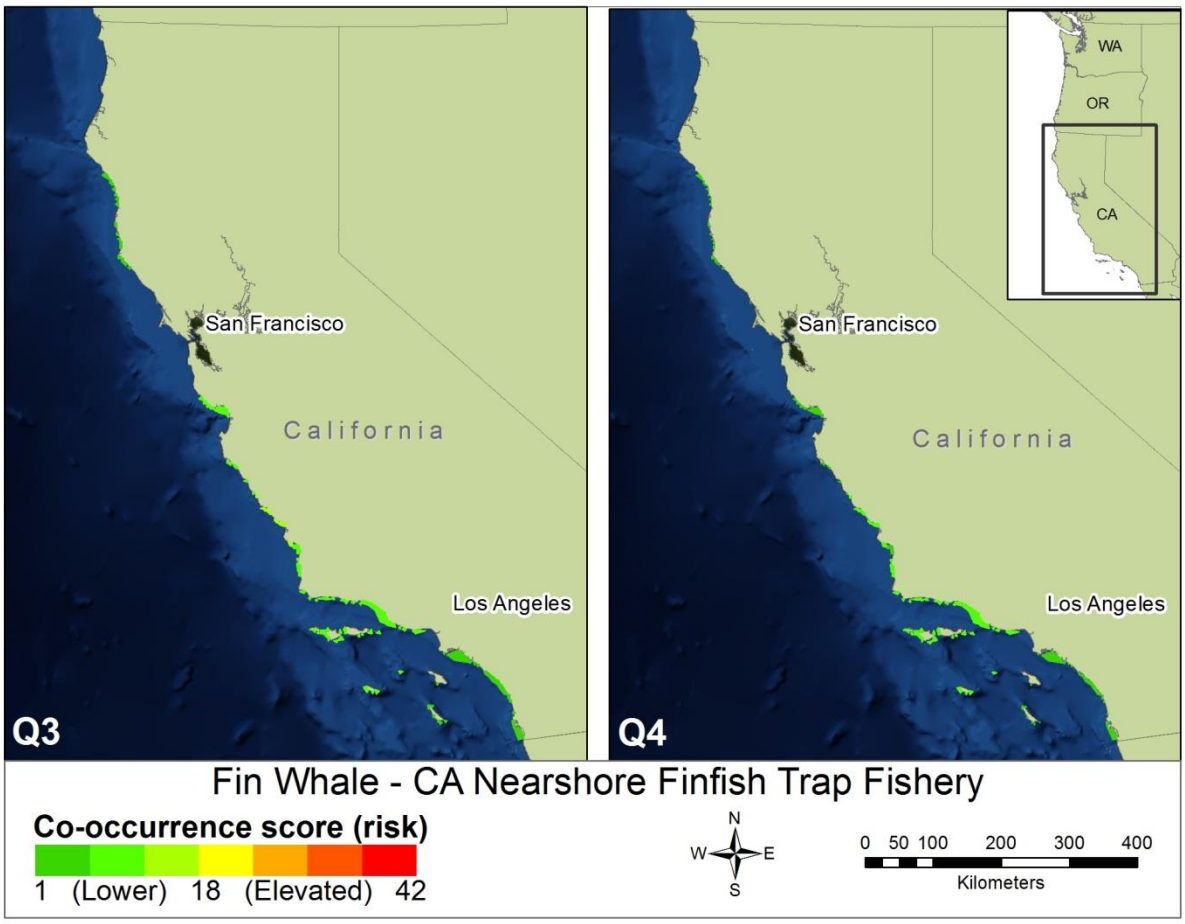

Figure 23 Co-occurrence of fin whale density and California nearshore live finfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

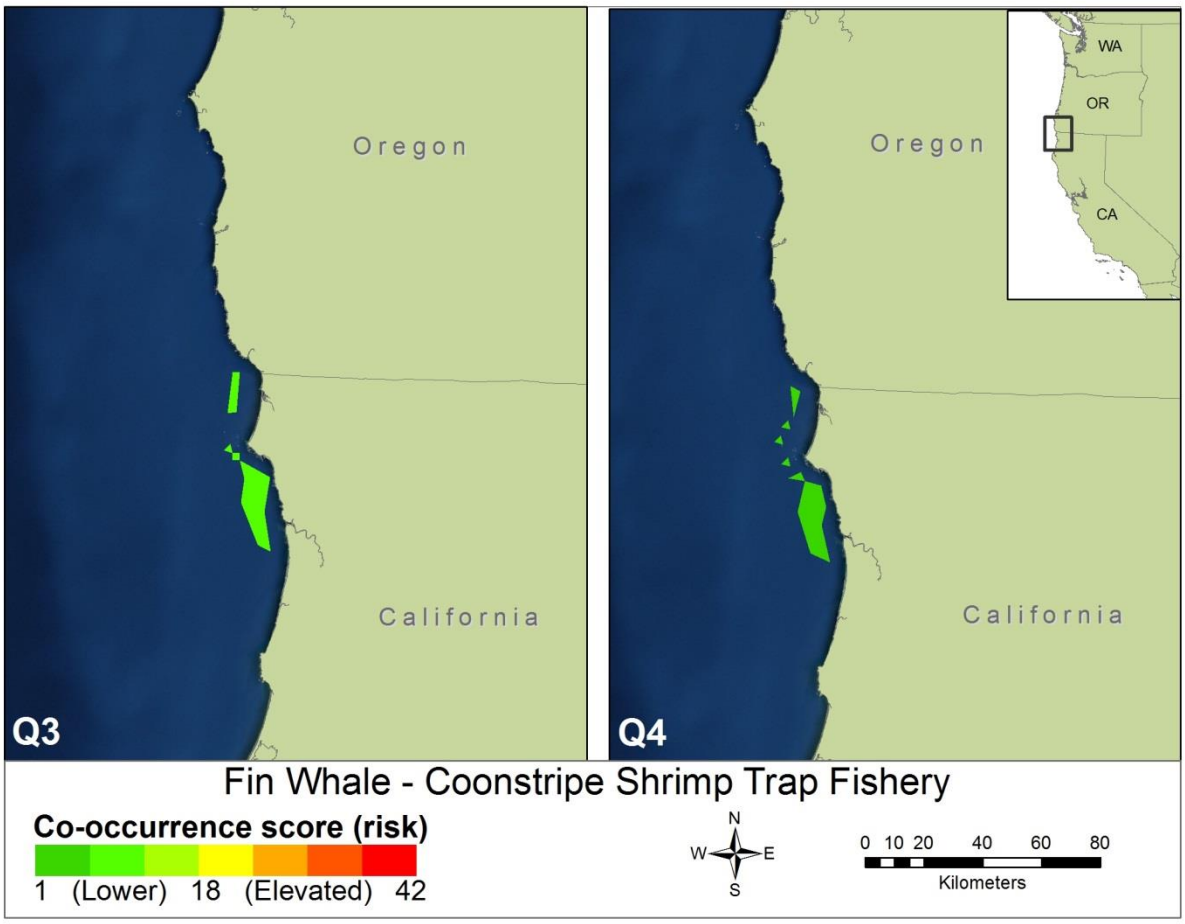

Figure 24 Co-occurrence of fin whale density and coonstripe shrimp trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

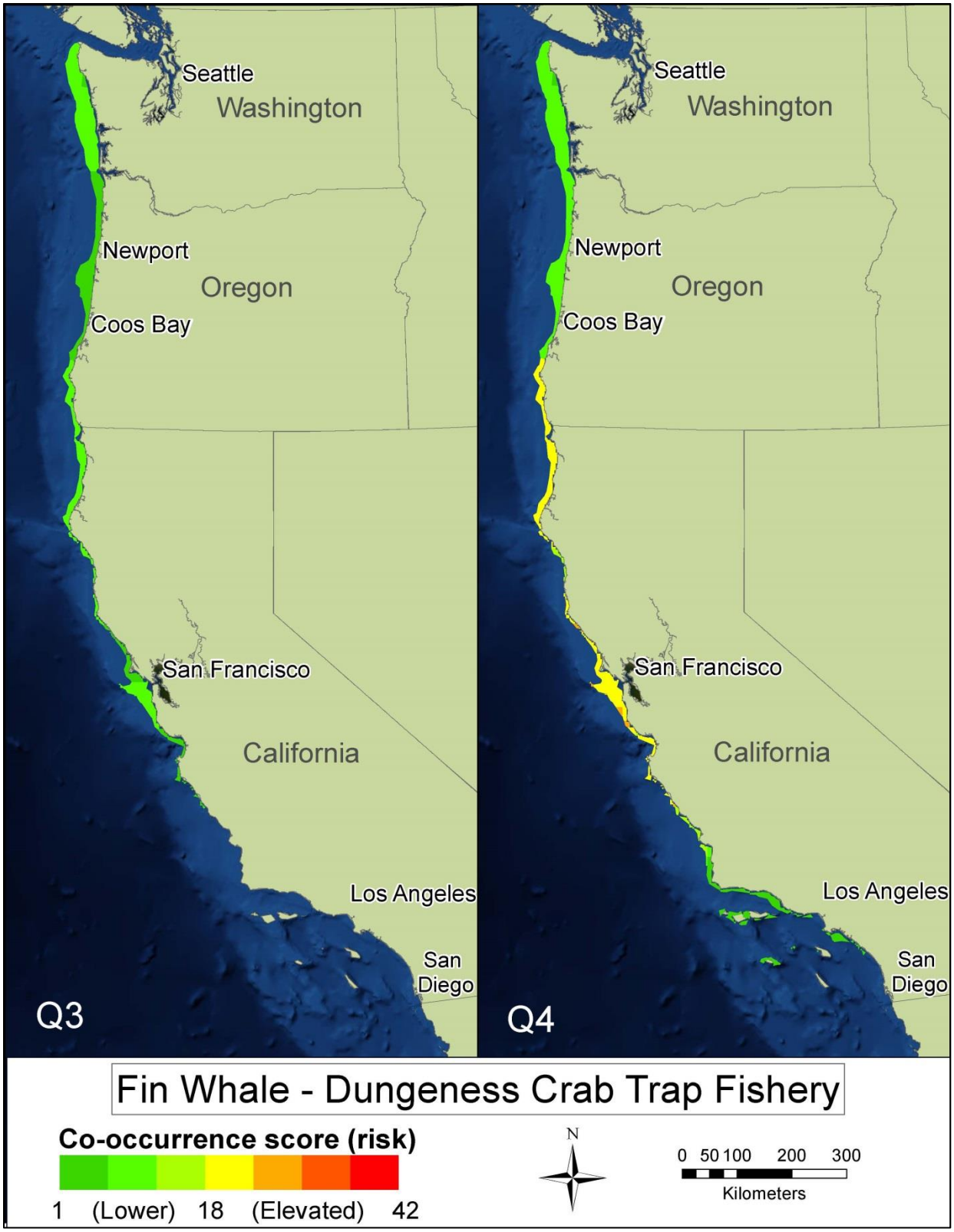

Figure 25 Co-occurrence of fin whale density and Dungeness crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

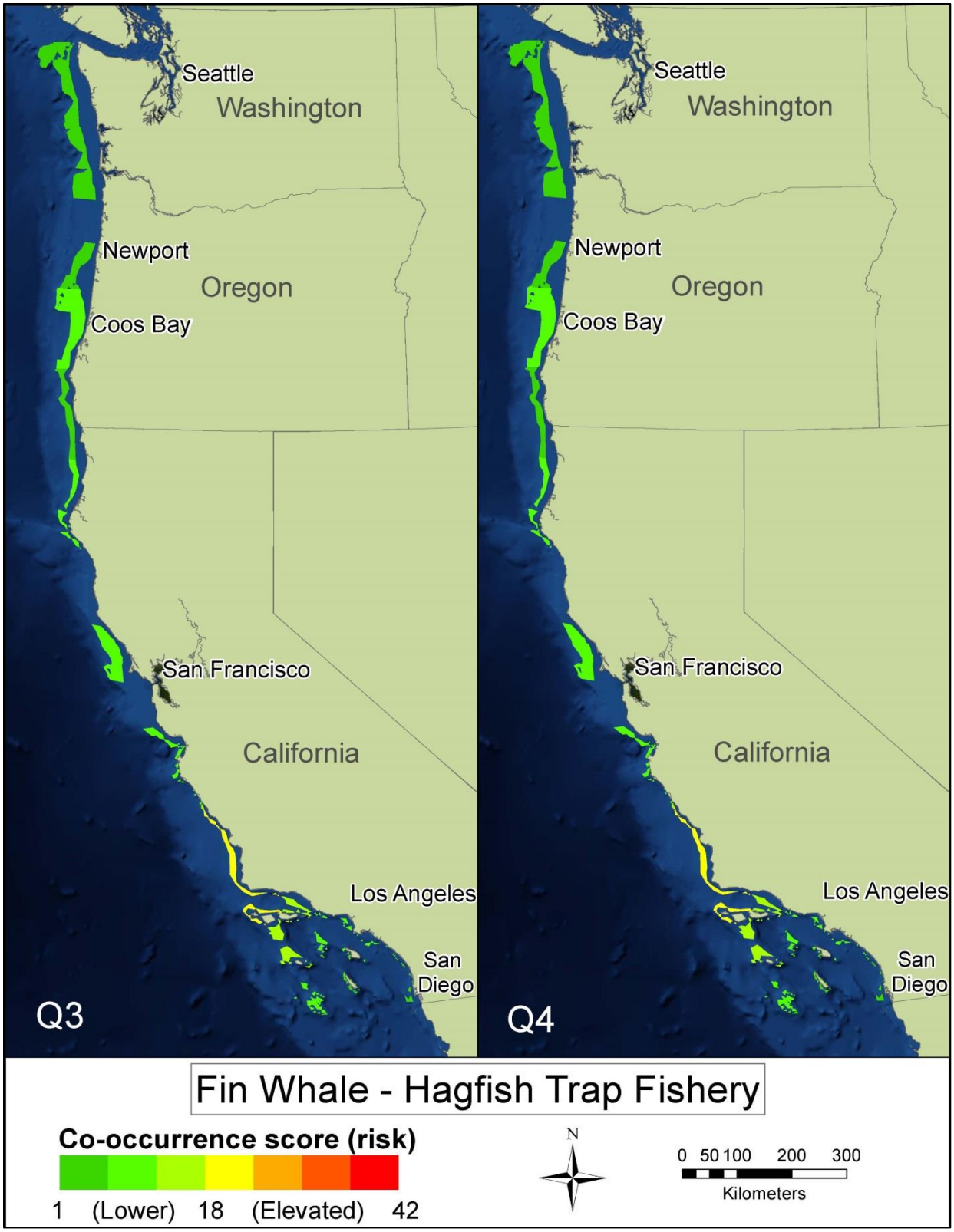

Figure 26 Co-occurrence of fin whale density hagfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

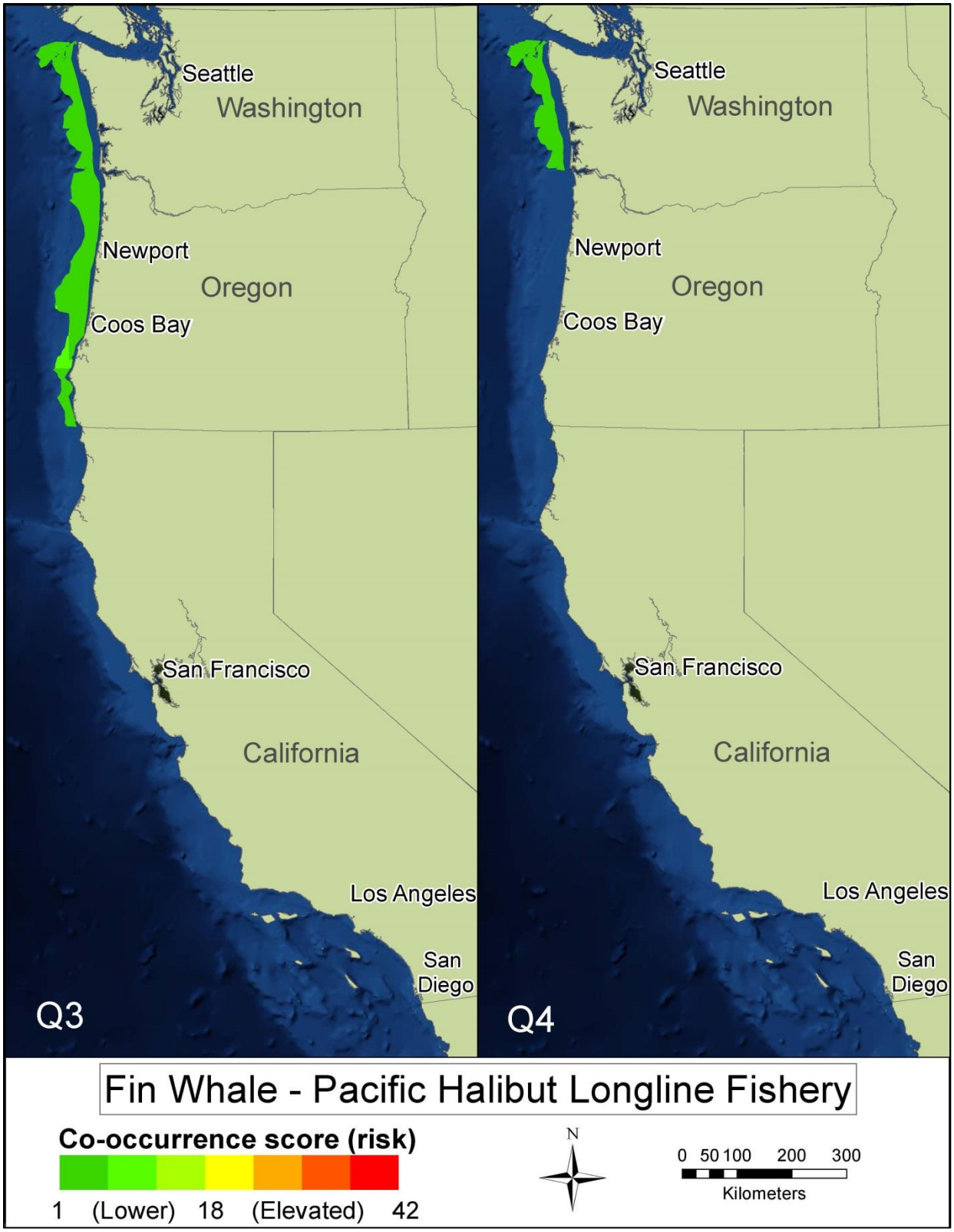

Figure 27 Co-occurrence of fin whale density Pacific halibut longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

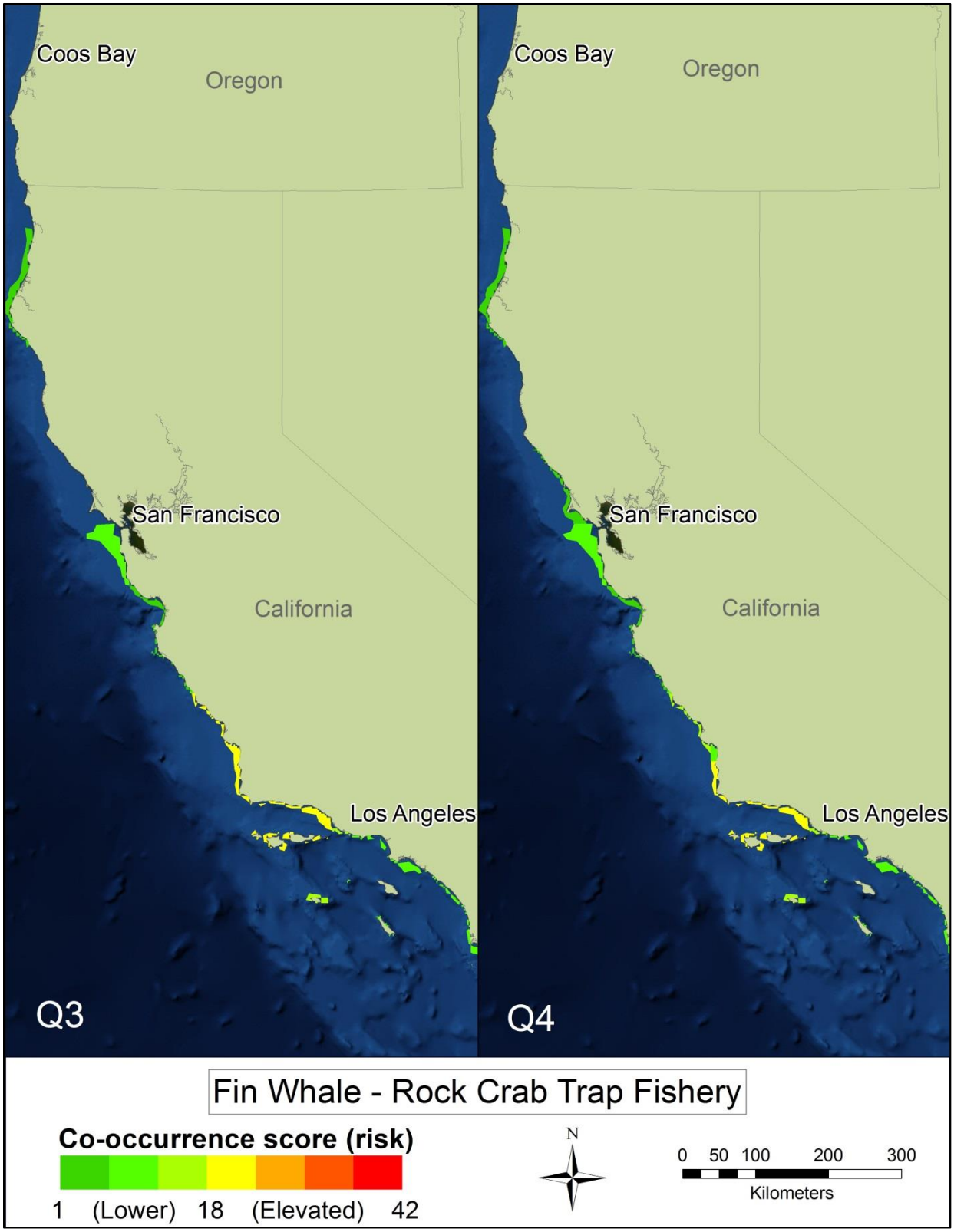

Figure 28 Co-occurrence of fin whale density and rock crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

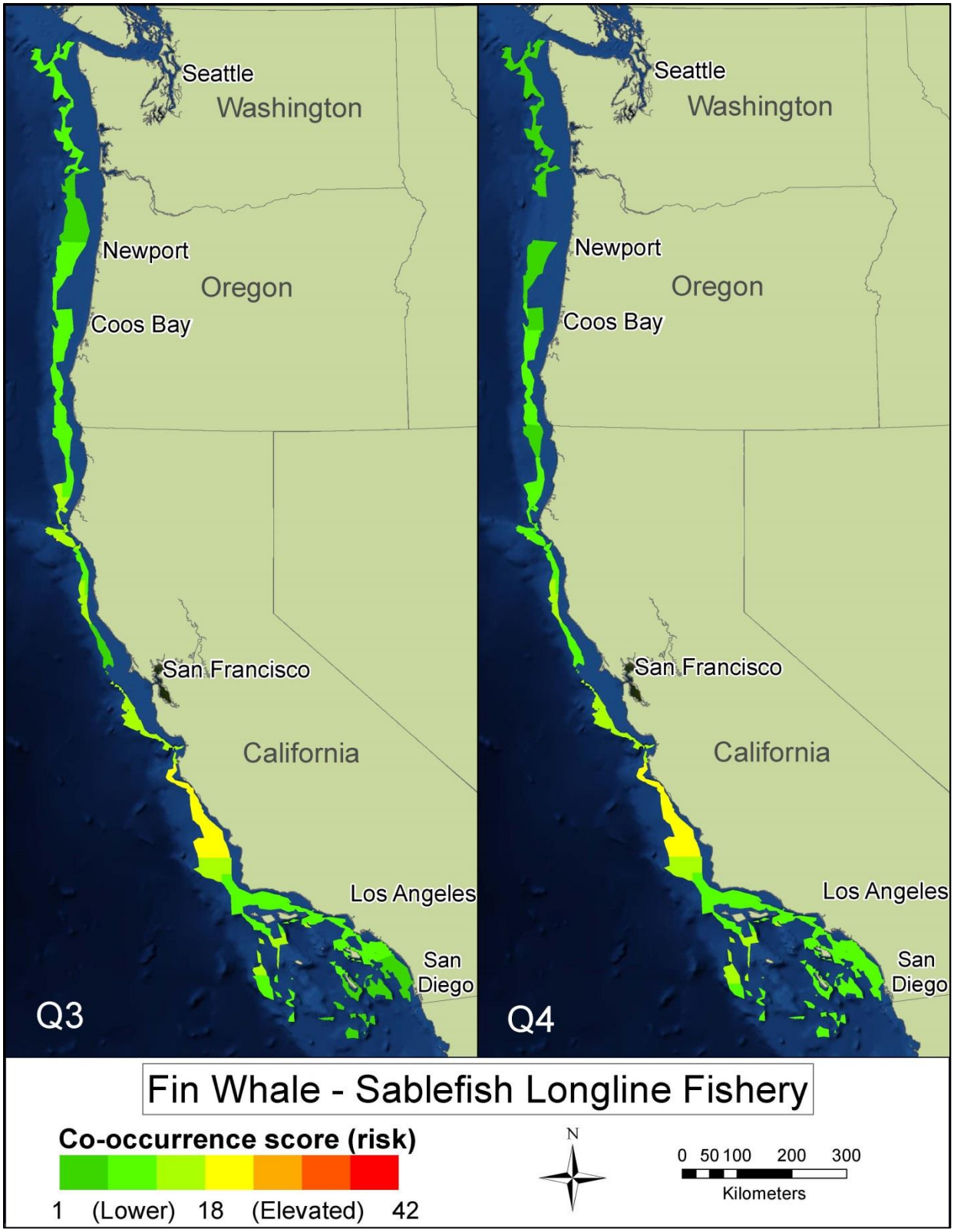

Figure 29 Co-occurrence of fin whale density and sablefish longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

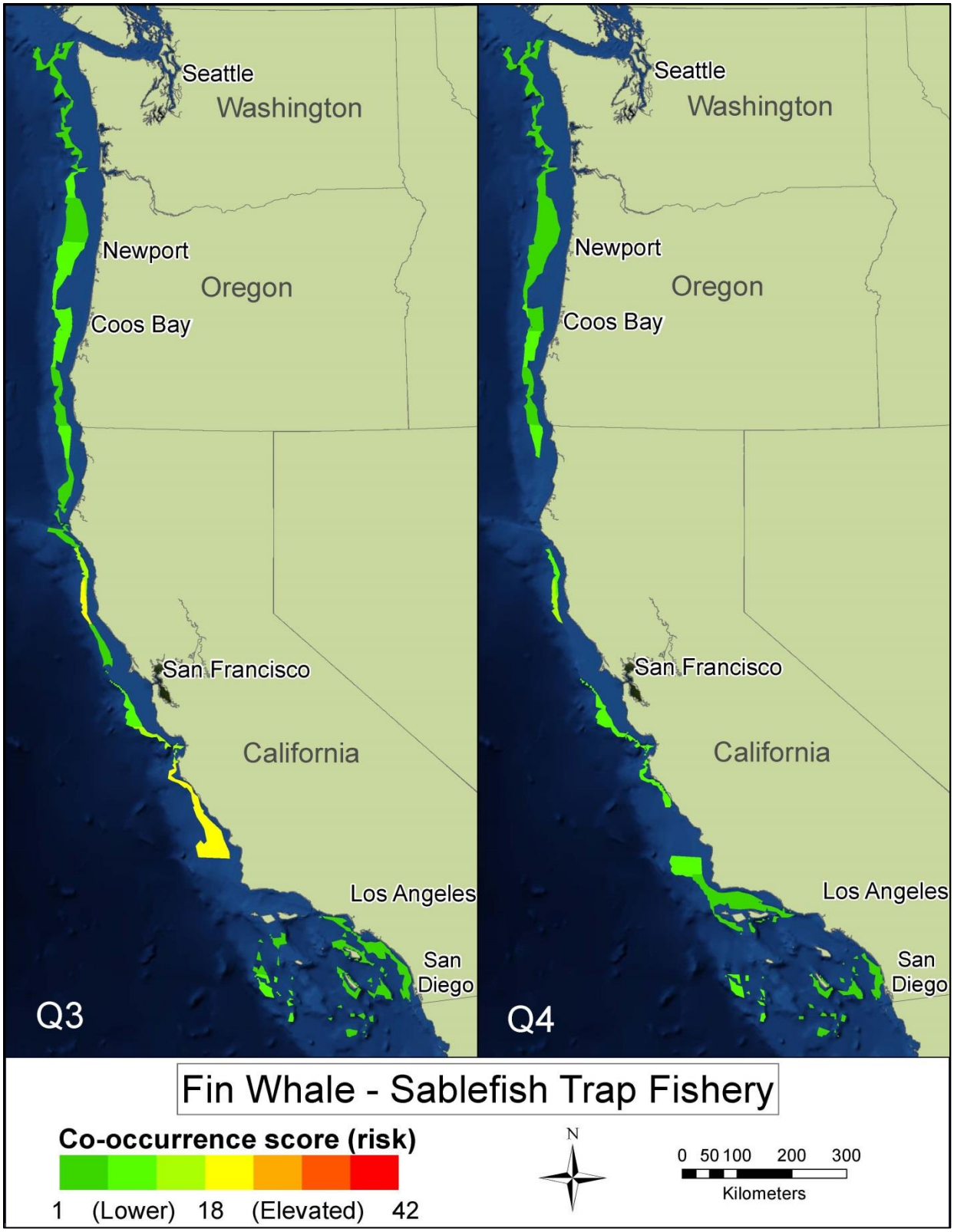

Figure 30 Co-occurrence of fin whale density and sablefish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

Figure 31 Co-occurrence of fin whale density and spiny lobster trap effort, shown for Quarter Three and Four. The spiny lobster trap fishery is closed in Quarter Three. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

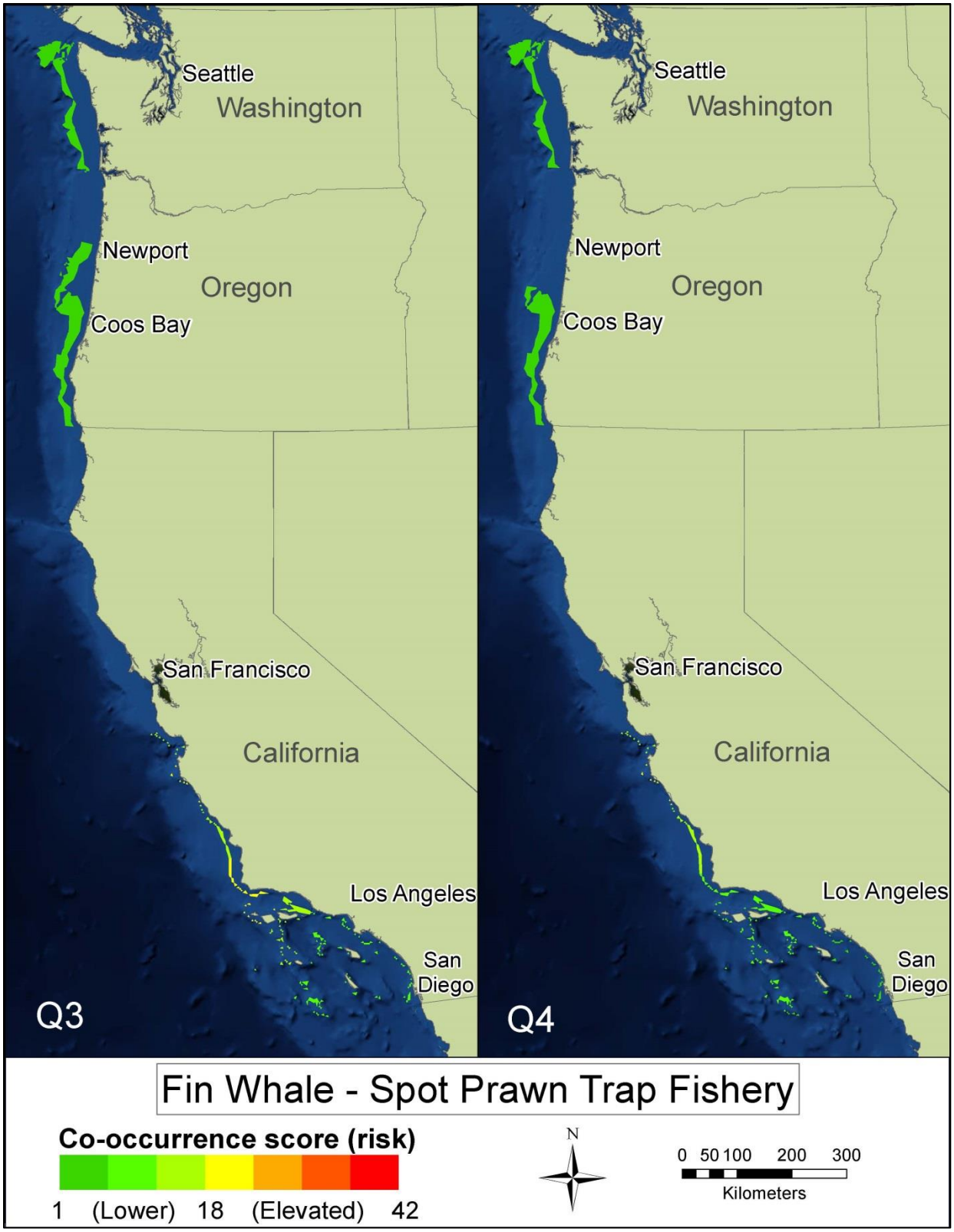

Figure 32 Co-occurrence of fin whale density spot prawn trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

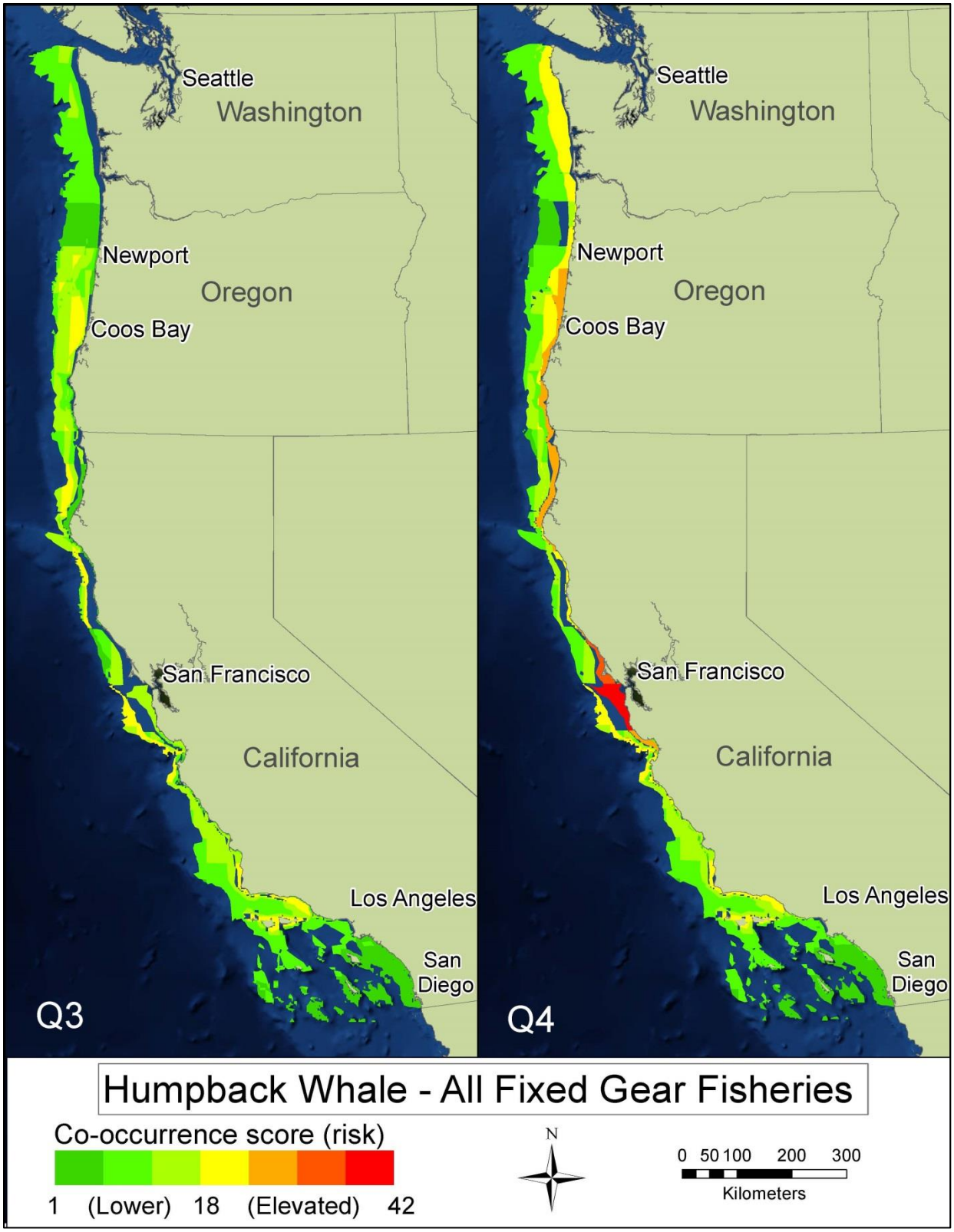

Figure 33 Co-occurrence of humpback whale density and fishing effort for all 11 fixed gear fisheries, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

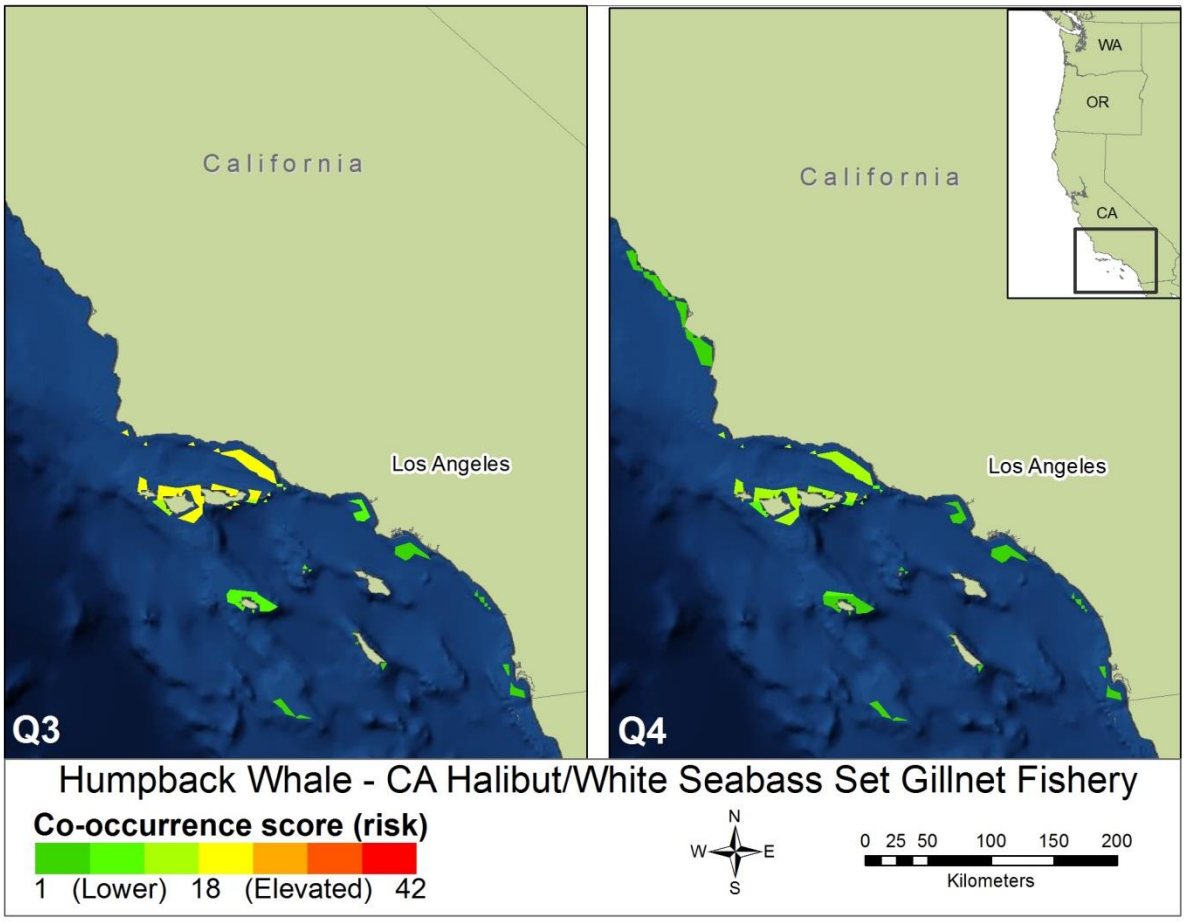

Figure 34 Co-occurrence of humpback whale density and California halibut/white seabass set gillnet effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

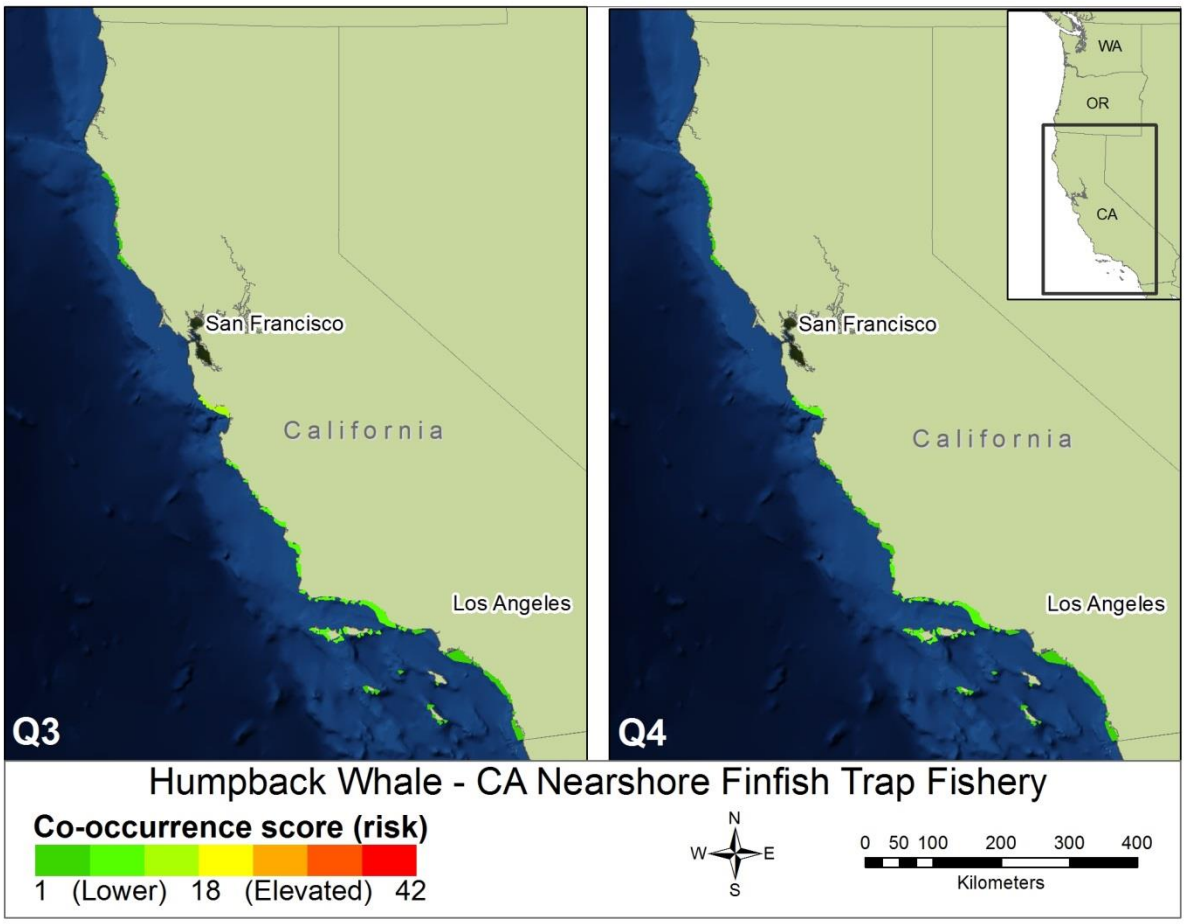

Figure 35 Co-occurrence of humpback whale density and California nearshore live finfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

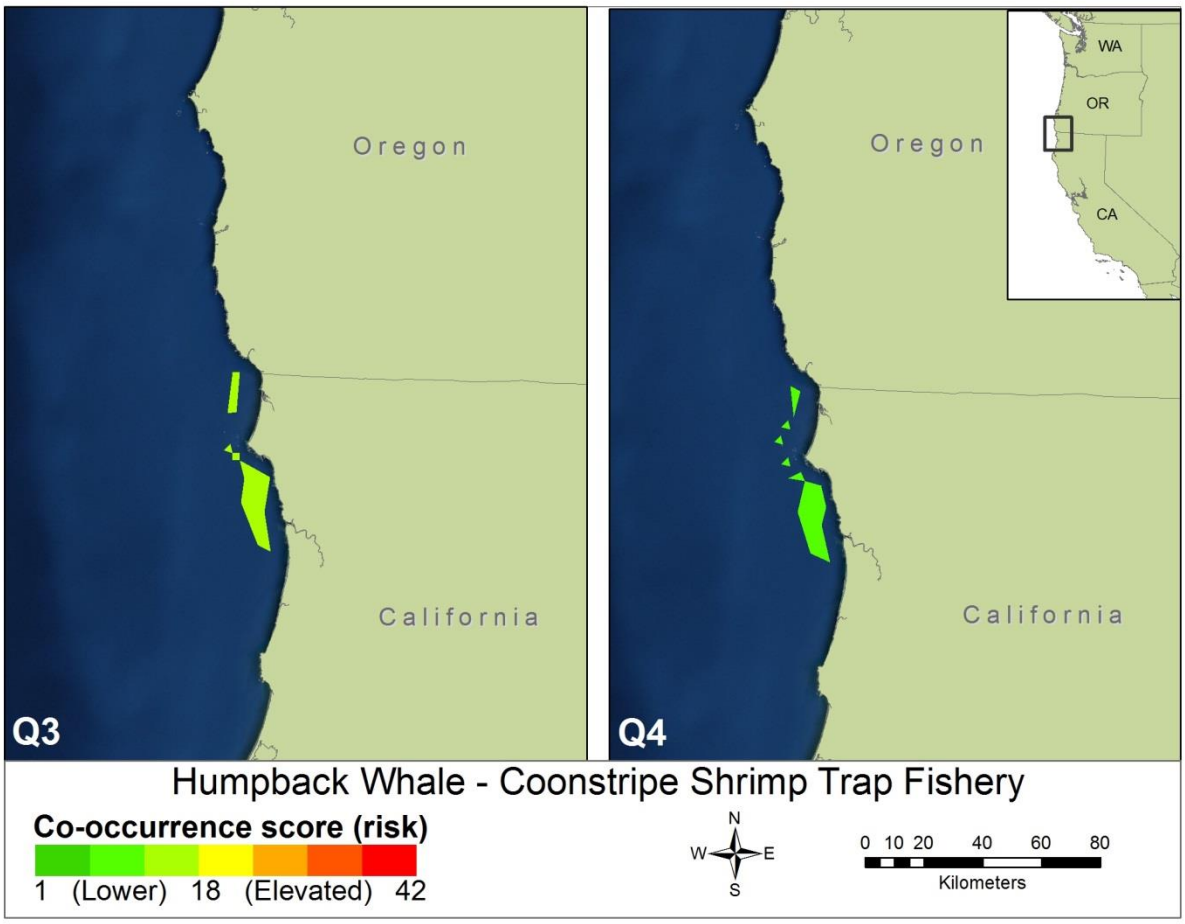

Figure 36 Co-occurrence of humpback whale density and coonstripe shrimp trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

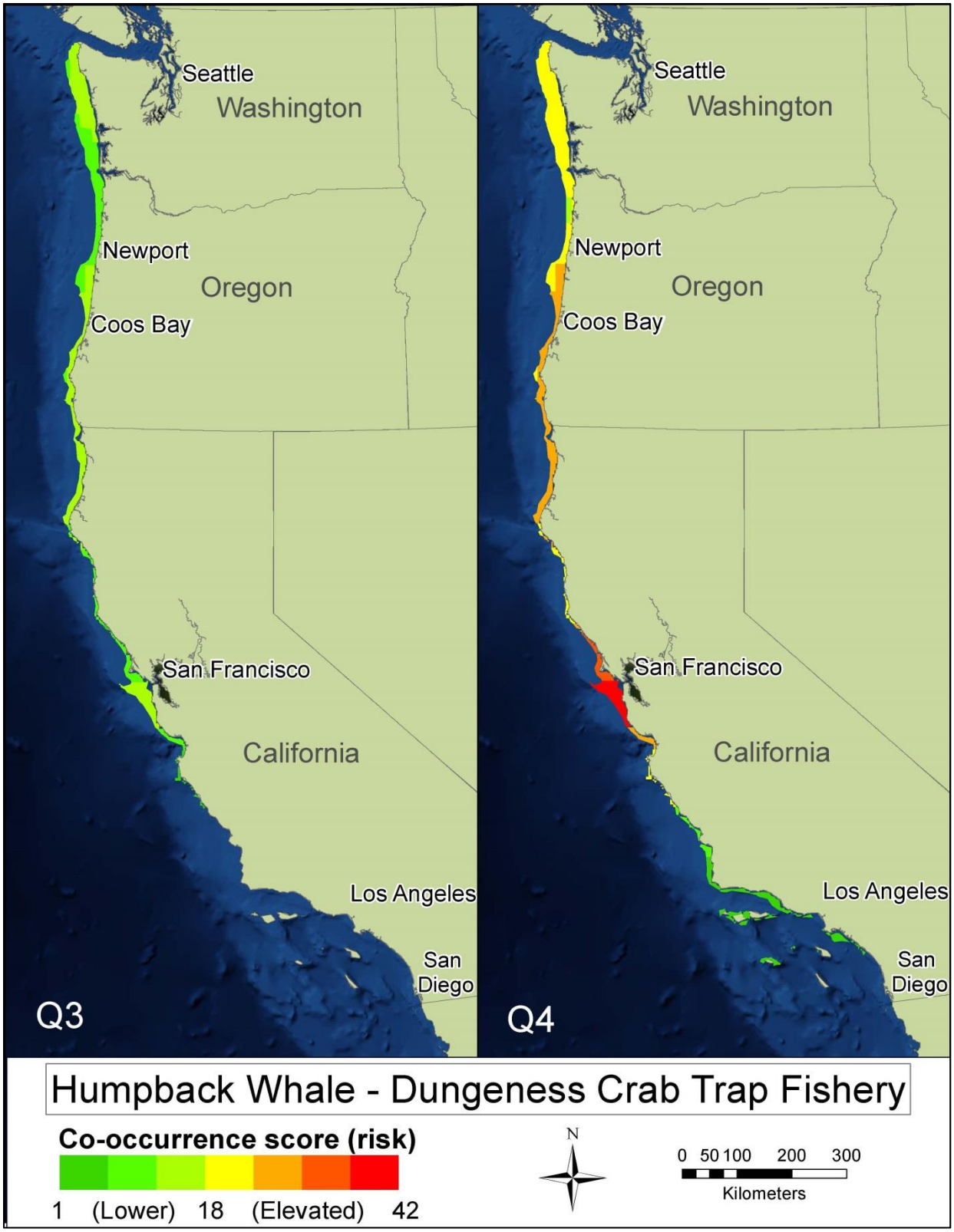

Figure 37 Co-occurrence of humpback whale density and Dungeness crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

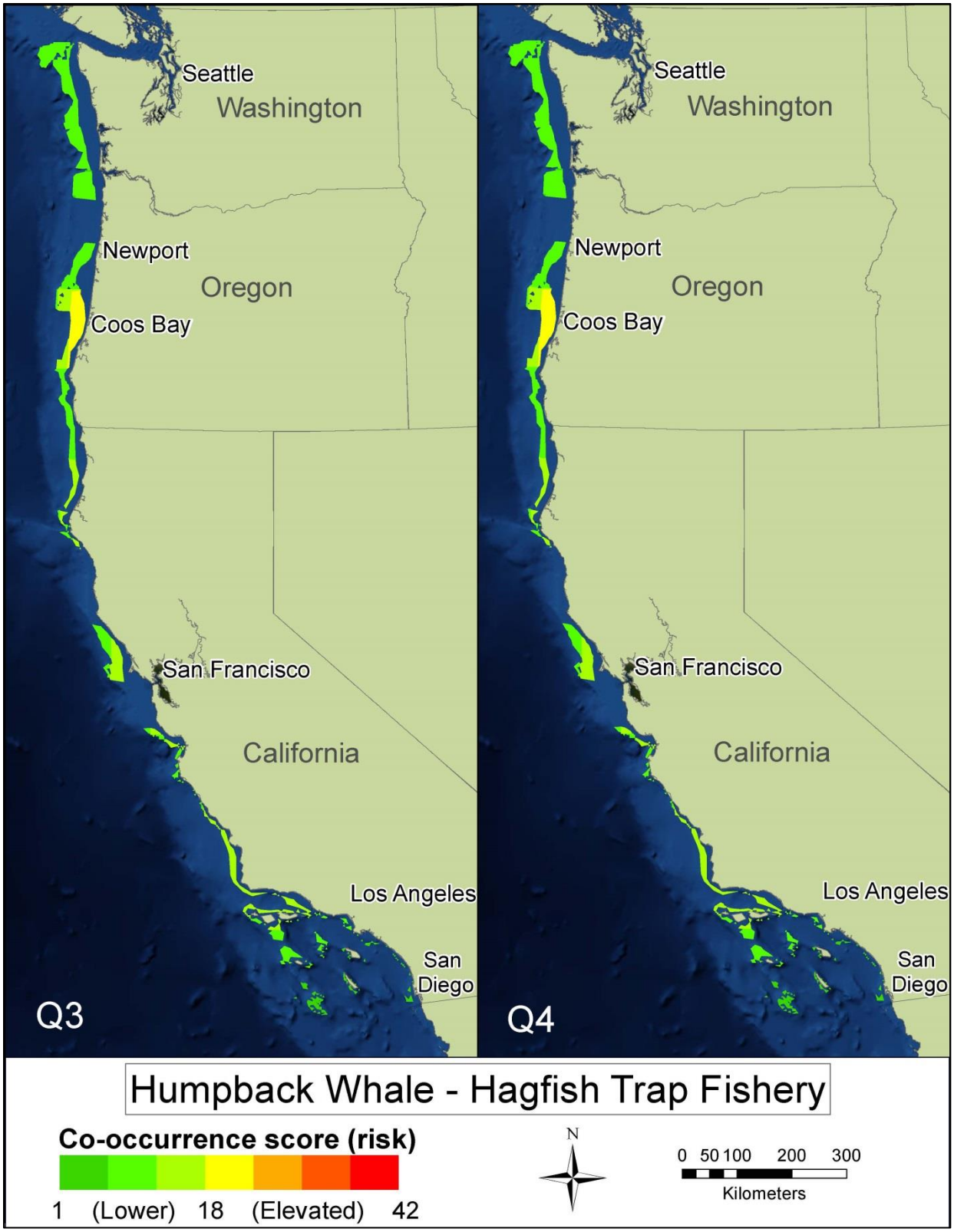

Figure 38 Co-occurrence of humpback whale density and hagfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

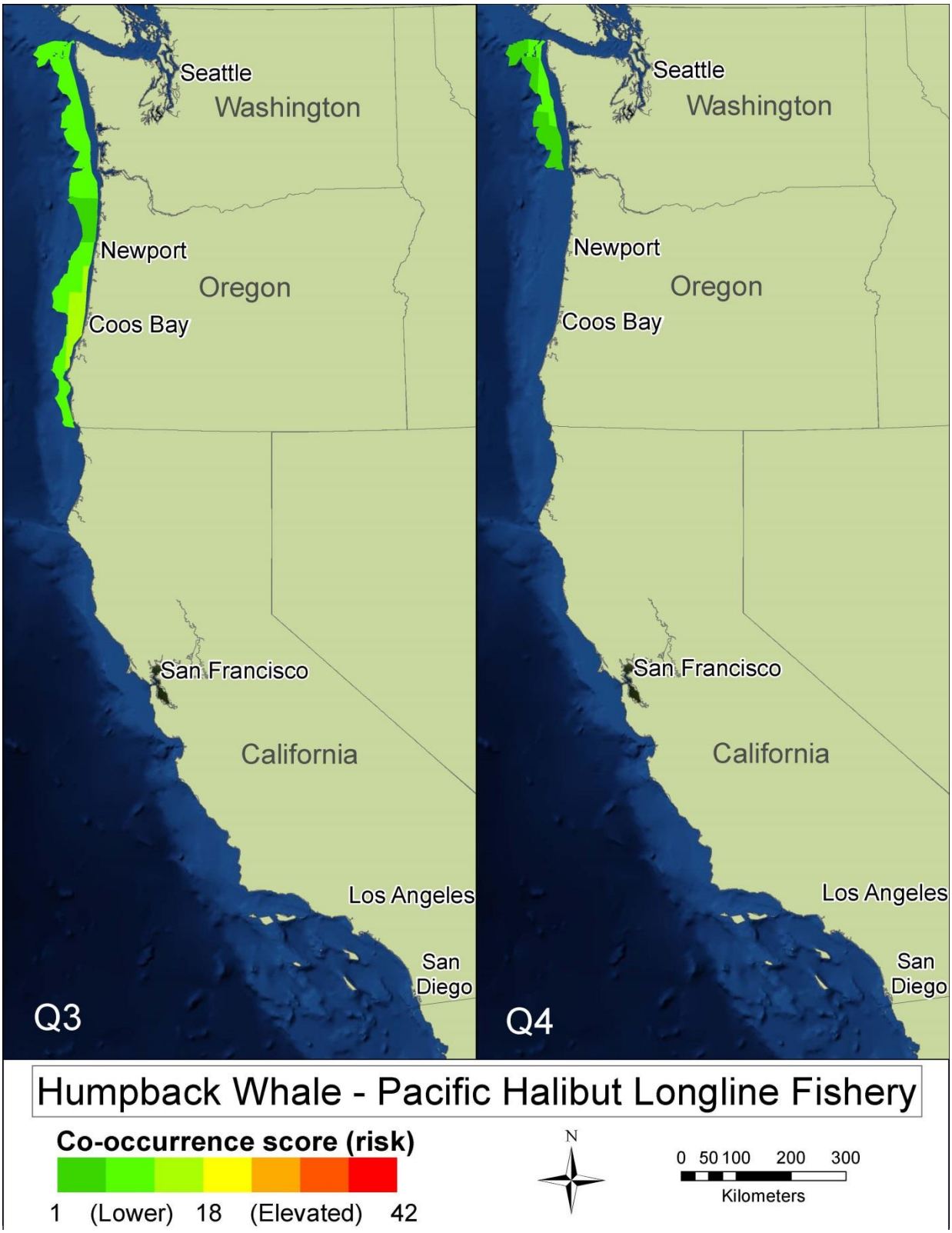

Figure 39 Co-occurrence of humpback whale density and Pacific halibut longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

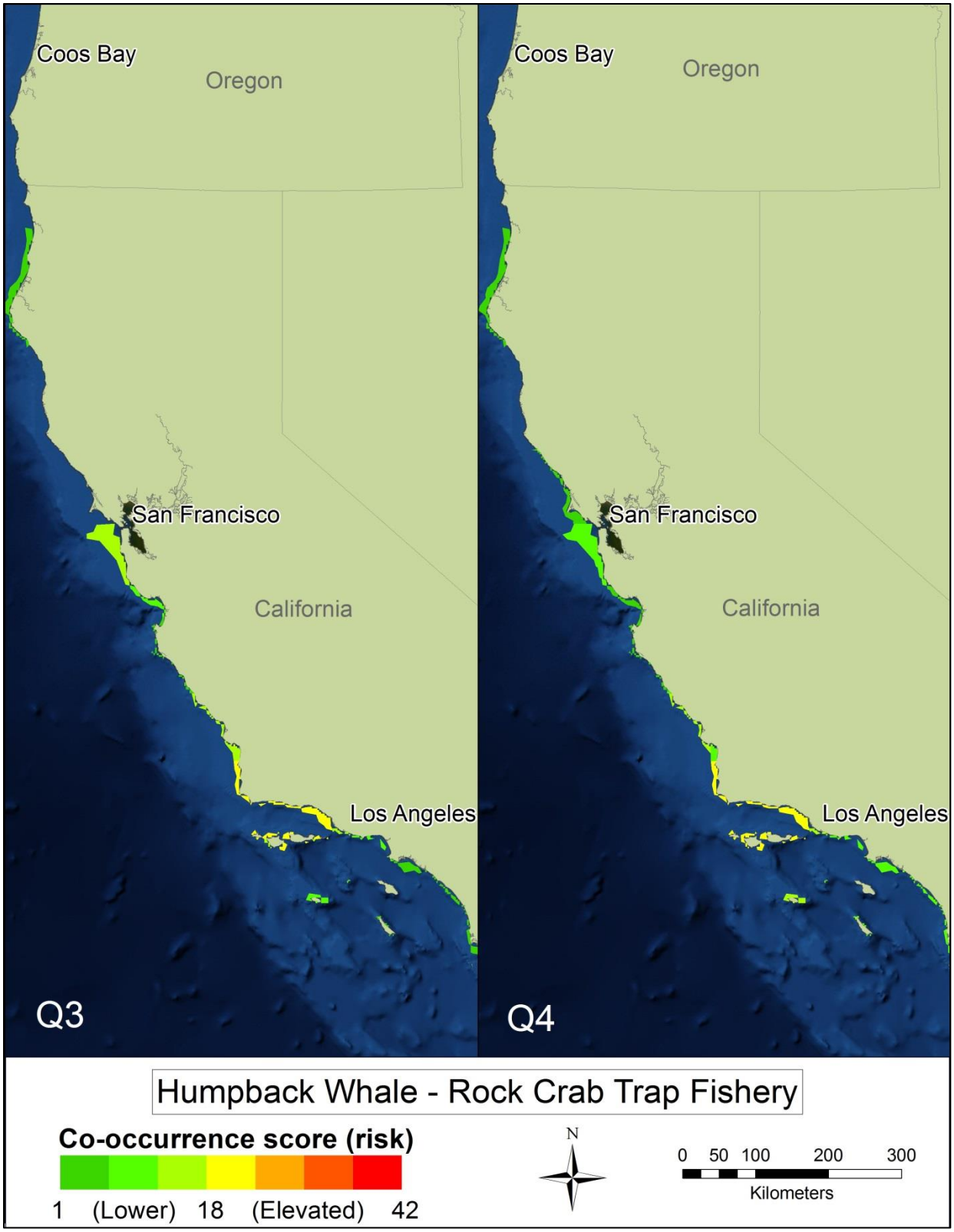

Figure 40 Co-occurrence of humpback whale density and rock crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

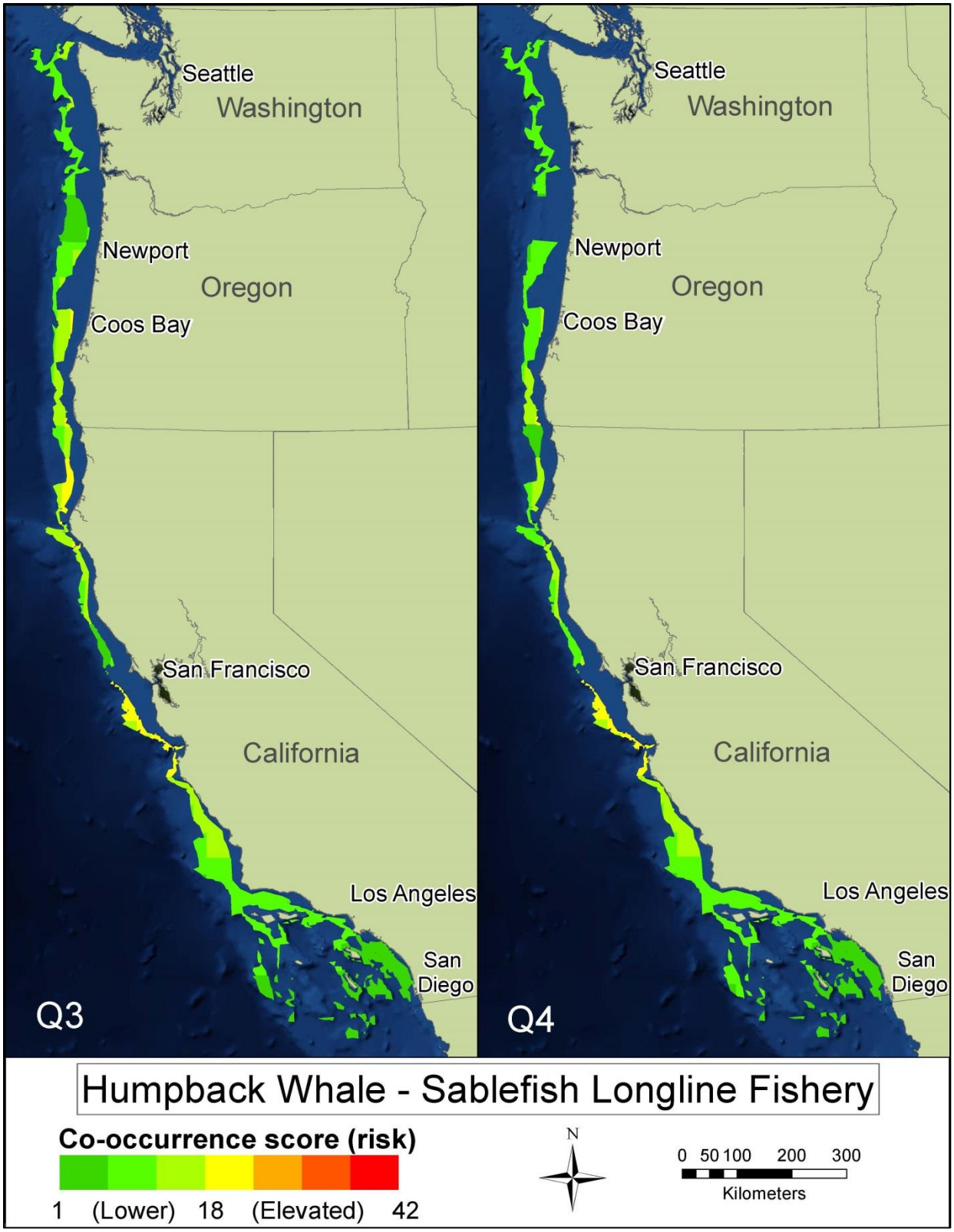

Figure 41 Co-occurrence of humpback whale density and sablefish longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

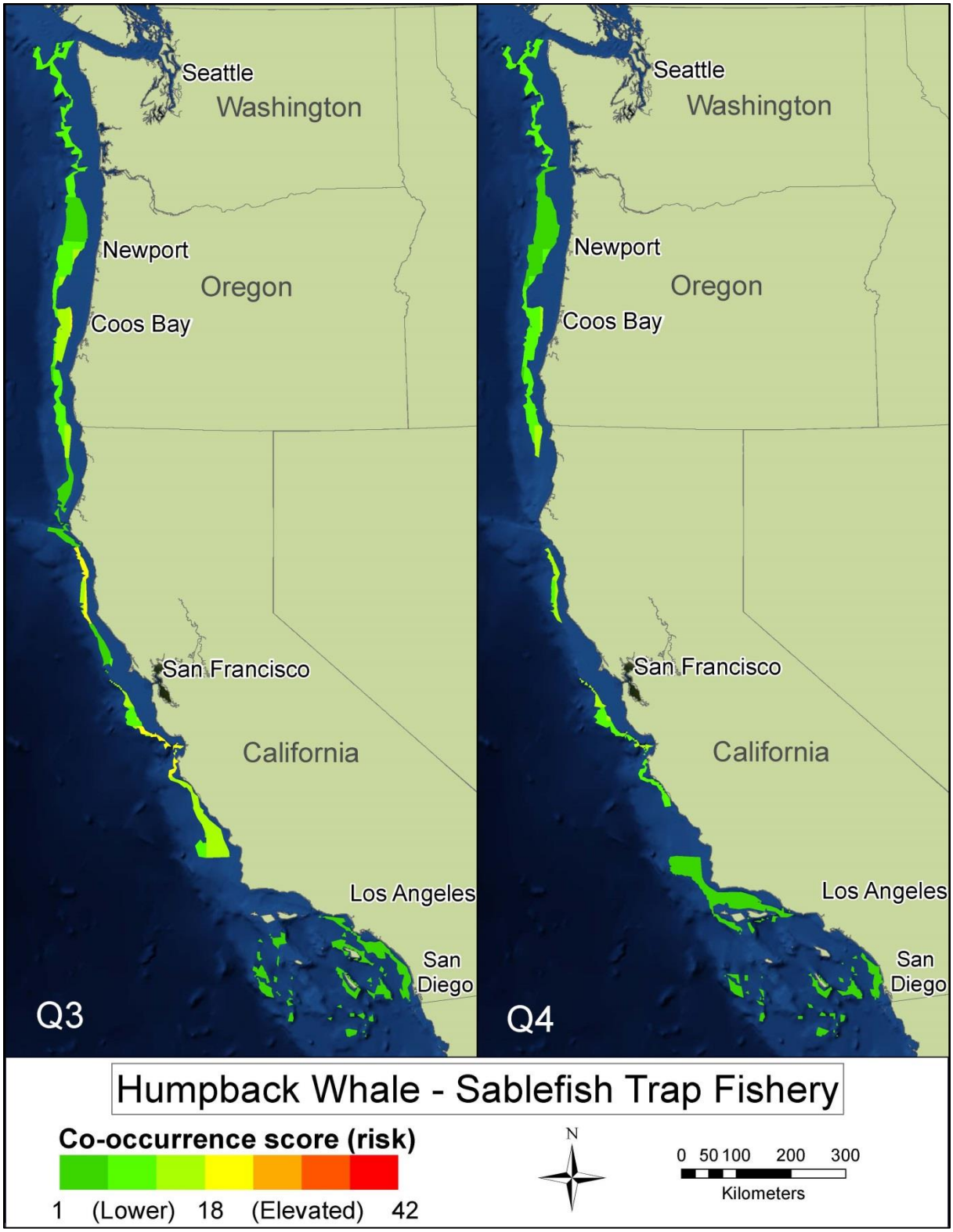

Figure 42 Co-occurrence of humpback whale density and sablefish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

Figure 43 Co-occurrence of humpback whale density and spiny lobster trap effort, shown for Quarter Three and Four. The spiny lobster trap fishery is closed in Quarter Three. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

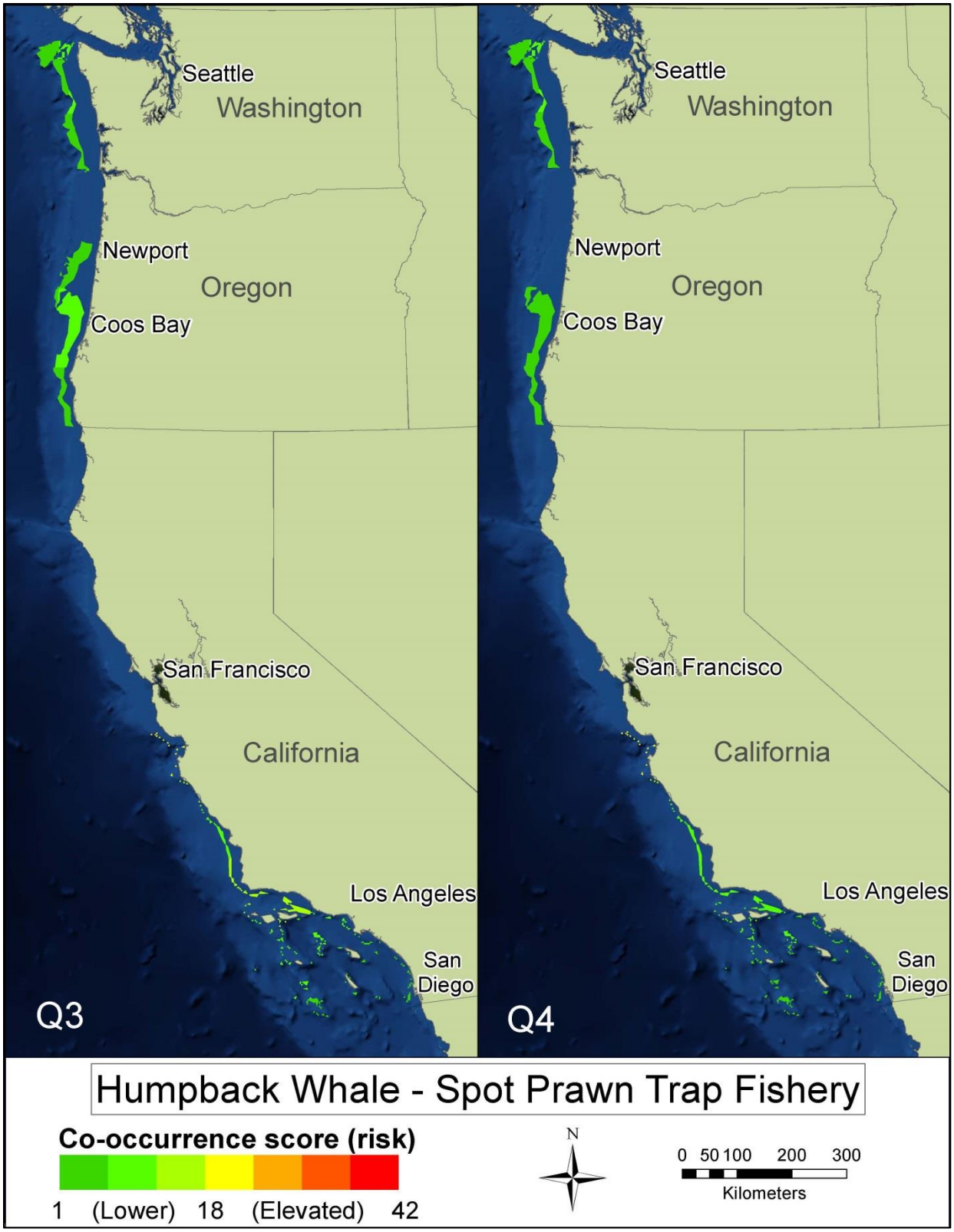

Figure 44 Co-occurrence of humpback whale density and spot prawn trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

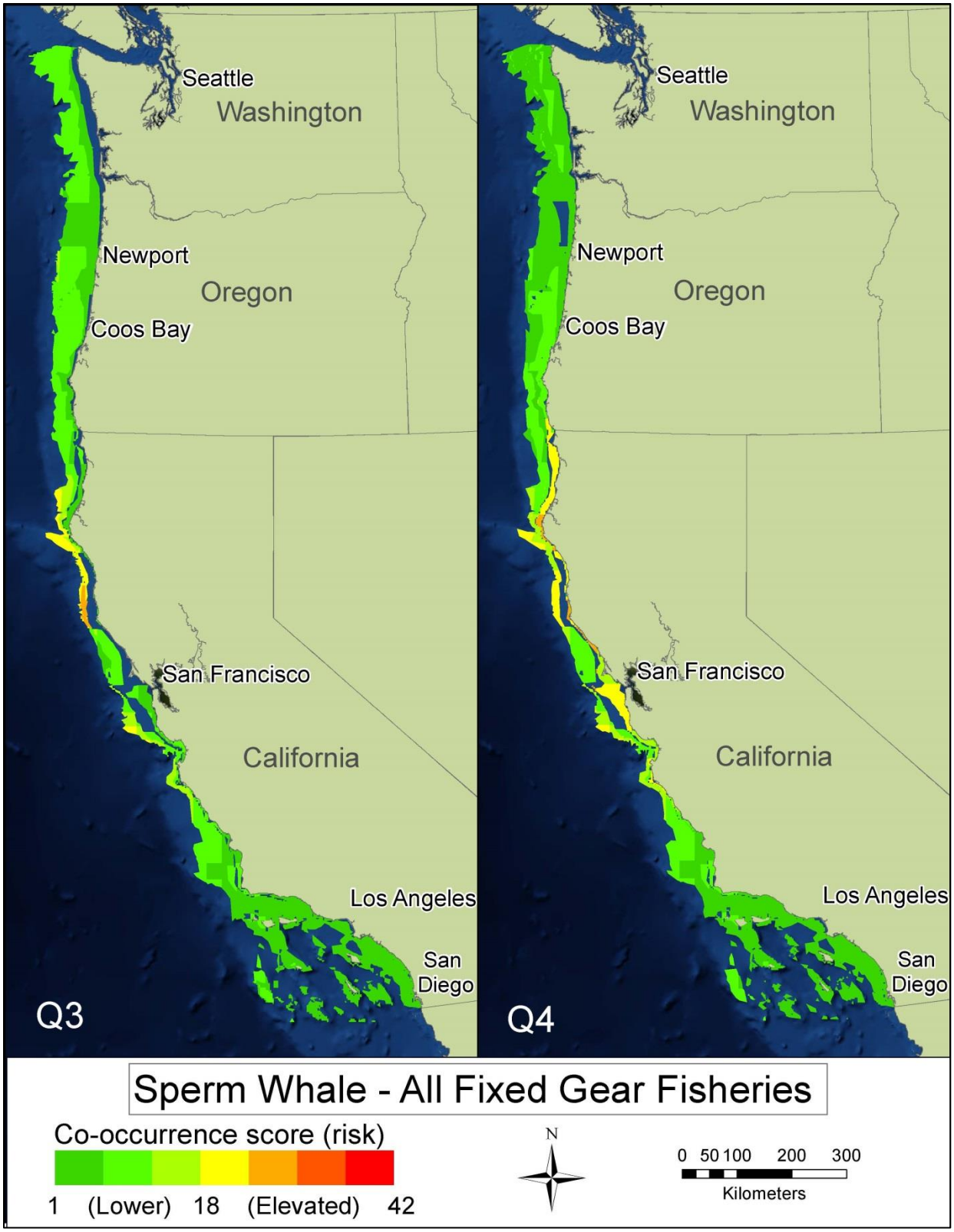

Figure 45 Co-occurrence of sperm whale density and fishing effort for all 11 fixed gear fisheries, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

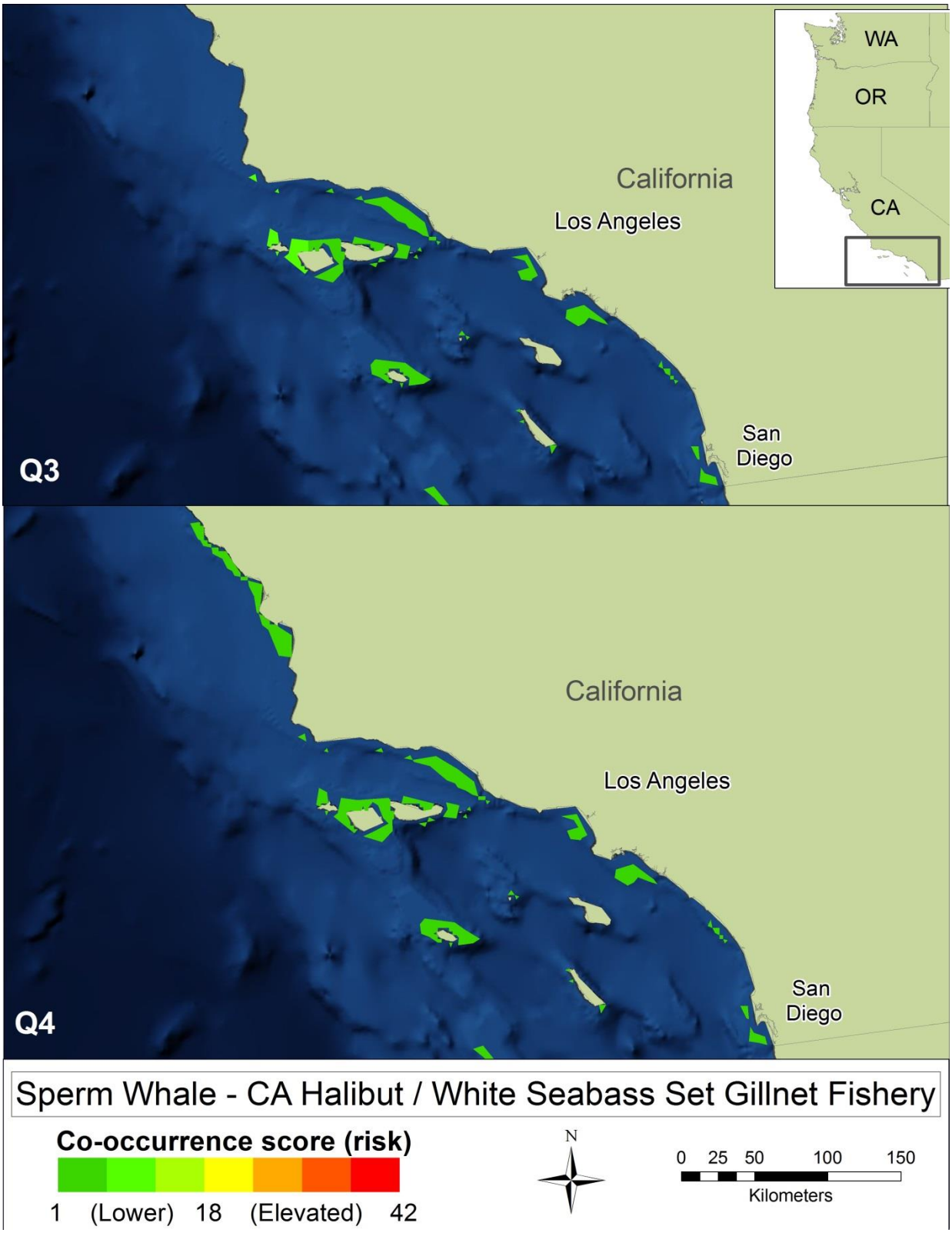

Figure 46 Co-occurrence of sperm whale density and California halibut/white seabass set gillnet effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

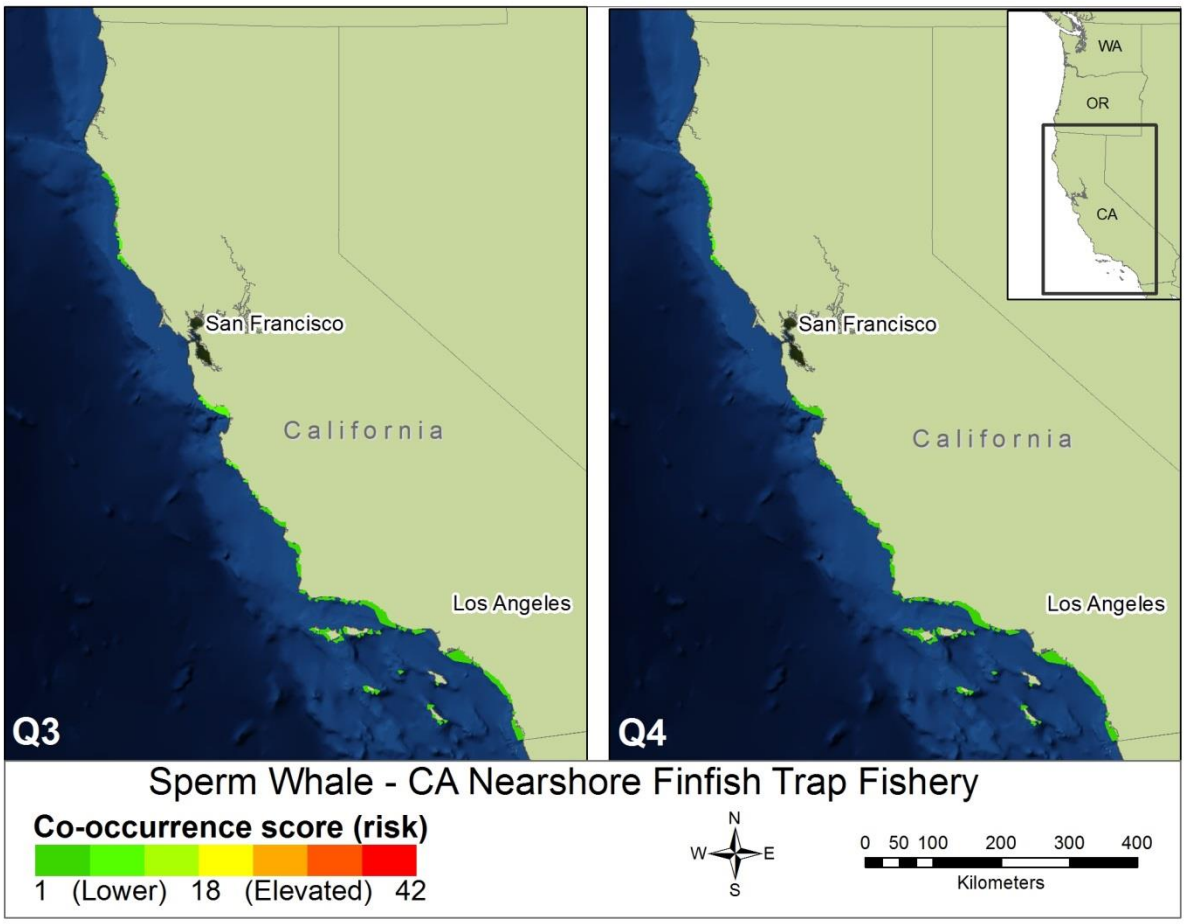

Figure 47 Co-occurrence of sperm whale density and California nearshore live finfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

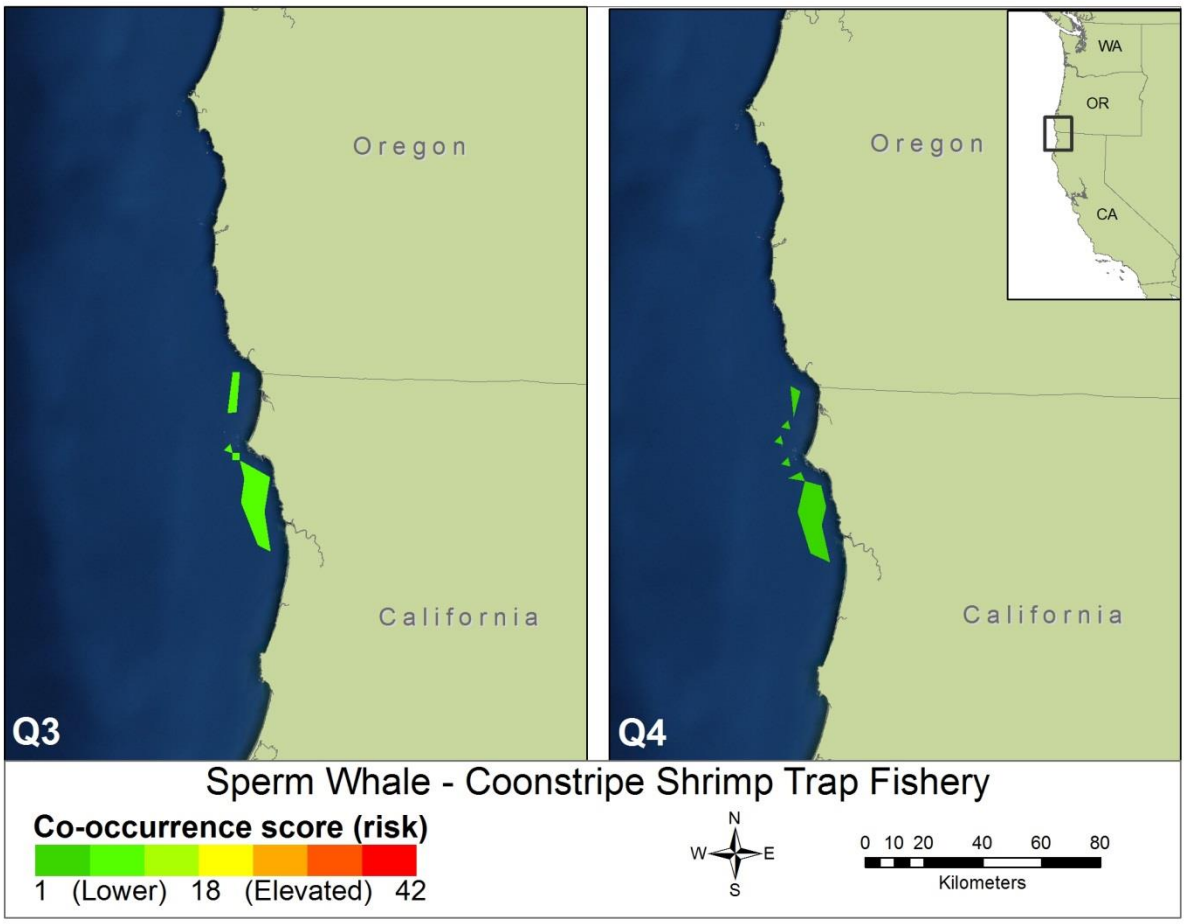

Figure 48 Co-occurrence of sperm whale density and coonstripe shrimp trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

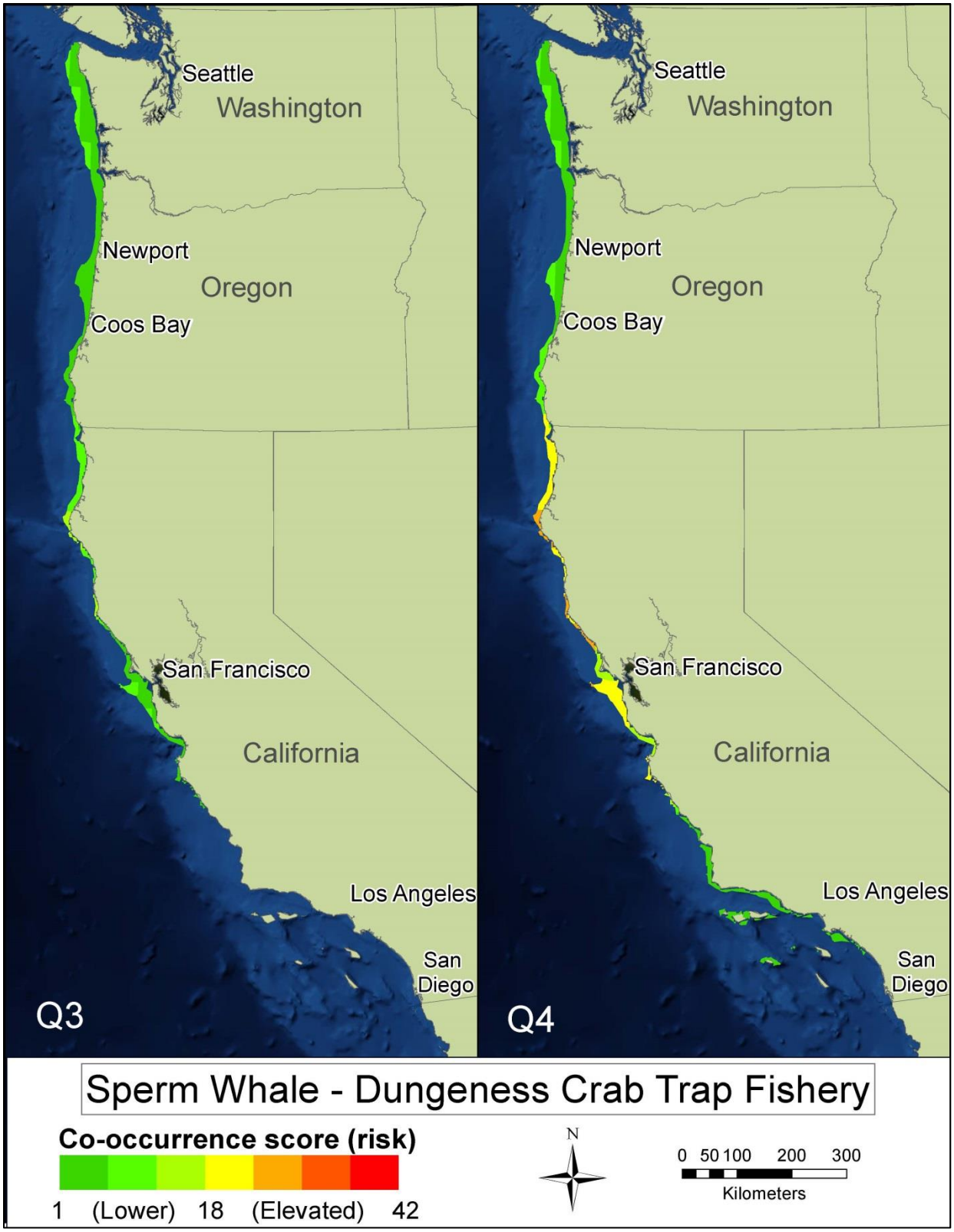

Figure 49 Co-occurrence of sperm whale density and Dungeness crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

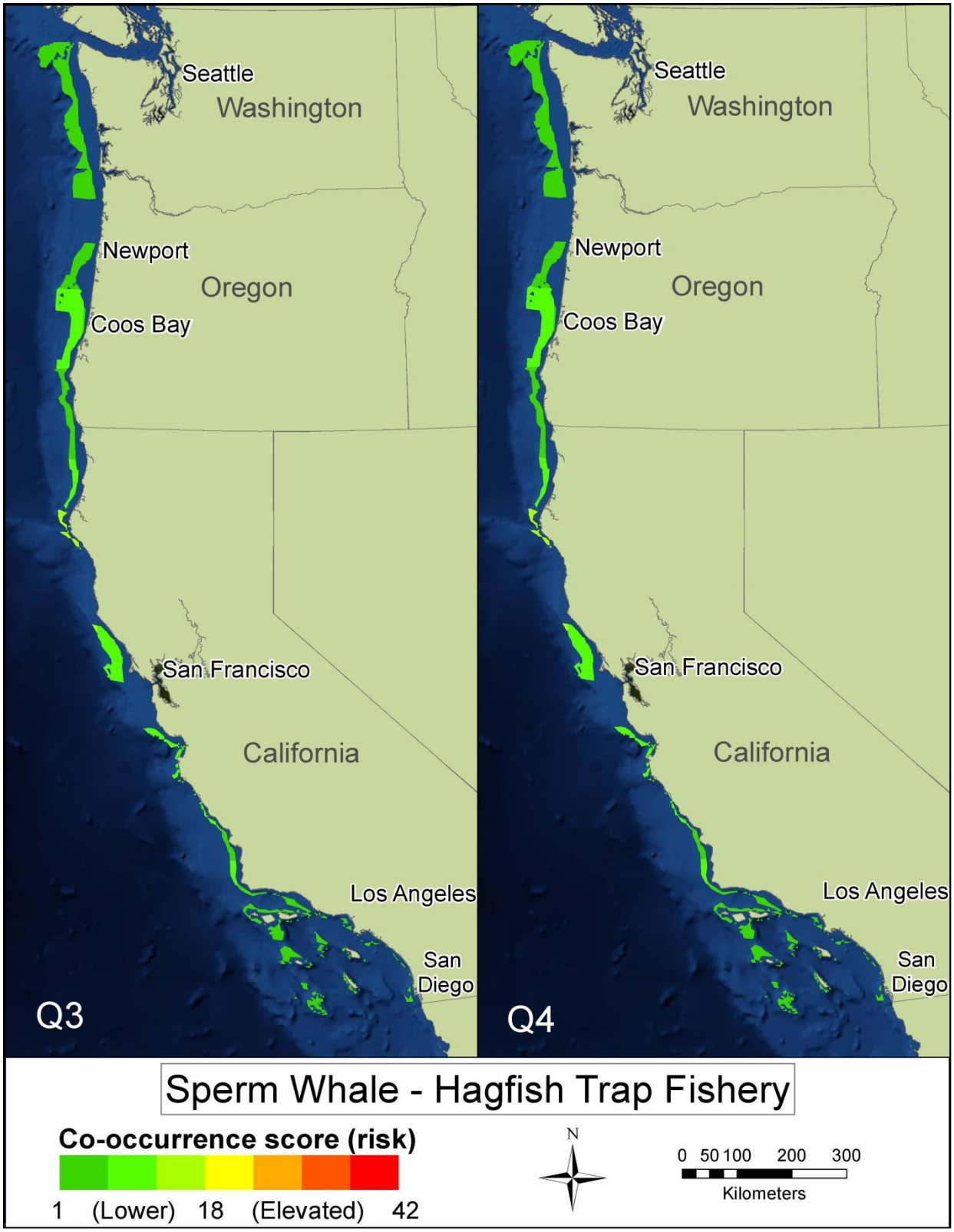

Figure 50 Co-occurrence of sperm whale density and hagfish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

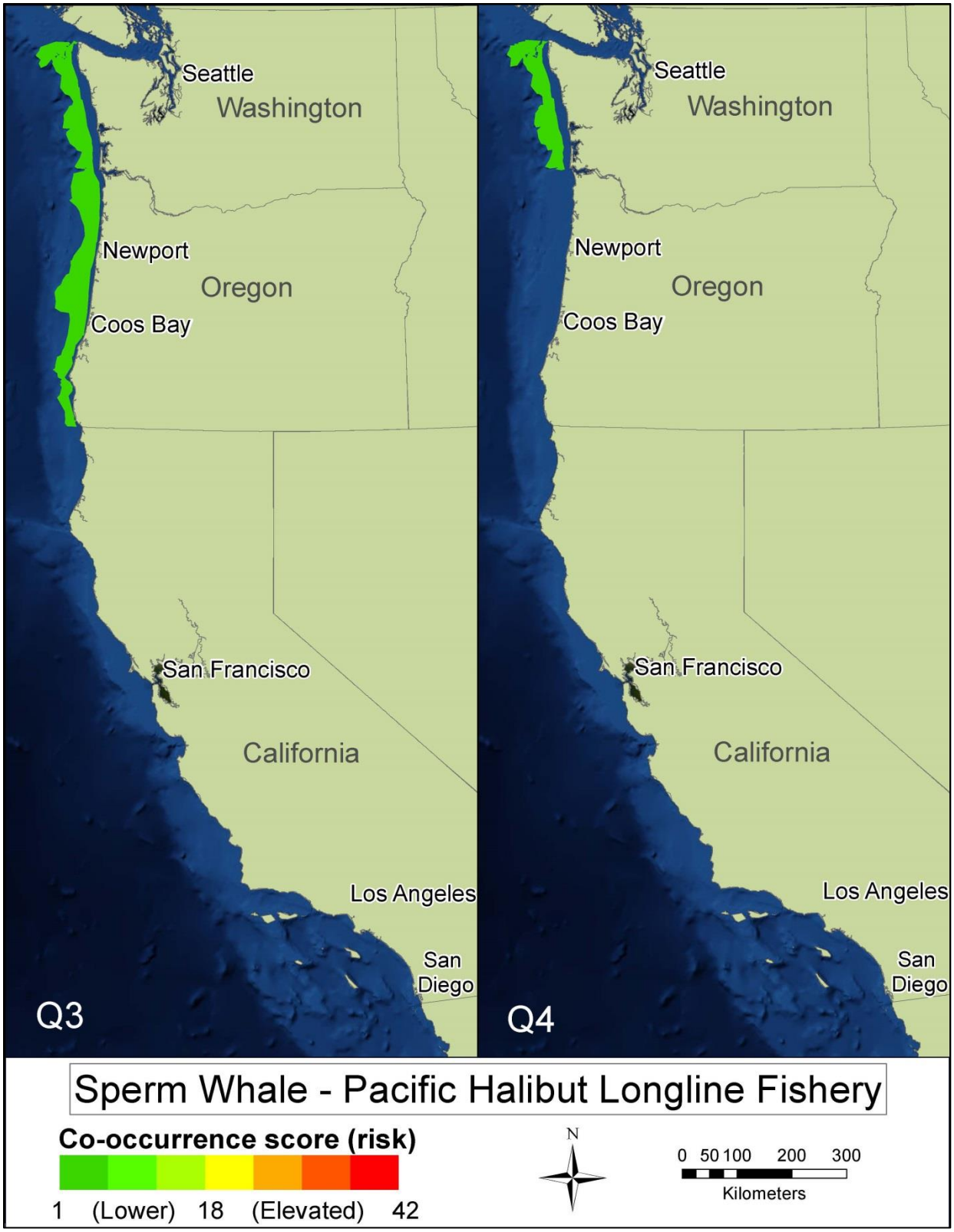

Figure 51 Co-occurrence of sperm whale density and Pacific halibut longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

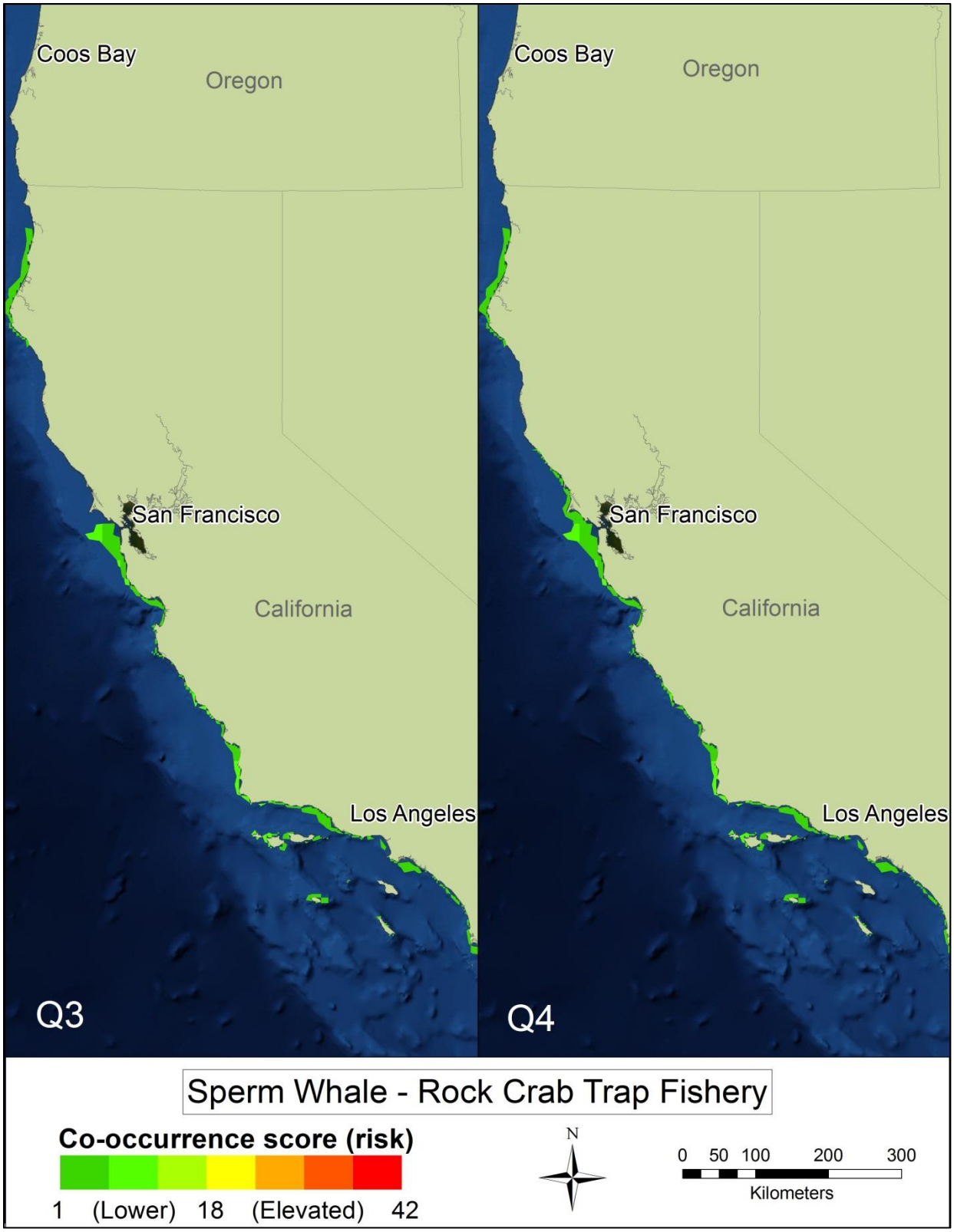

Figure 52 Co-occurrence of sperm whale density and rock crab trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

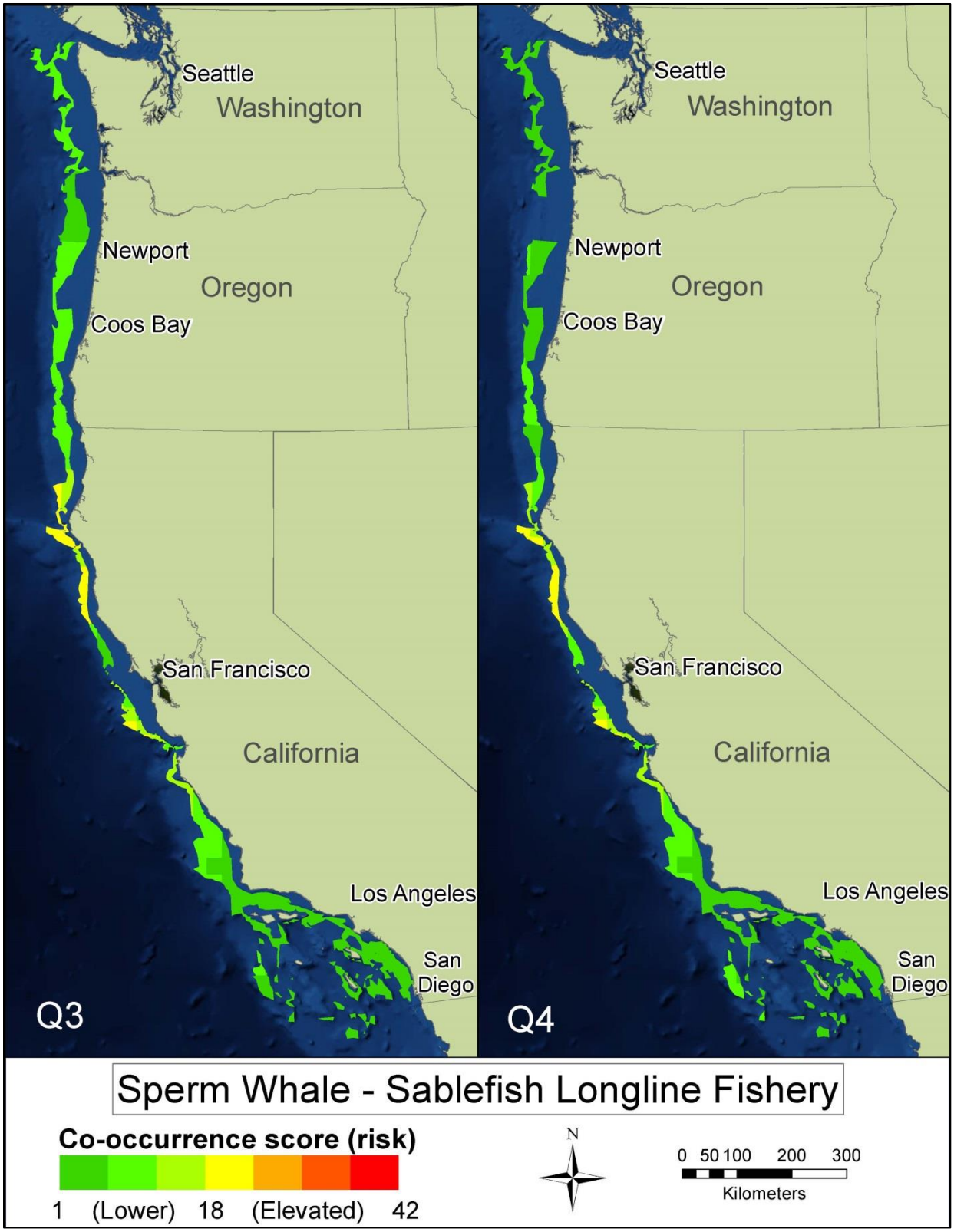

Figure 53 Co-occurrence of sperm whale density and sablefish longline effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

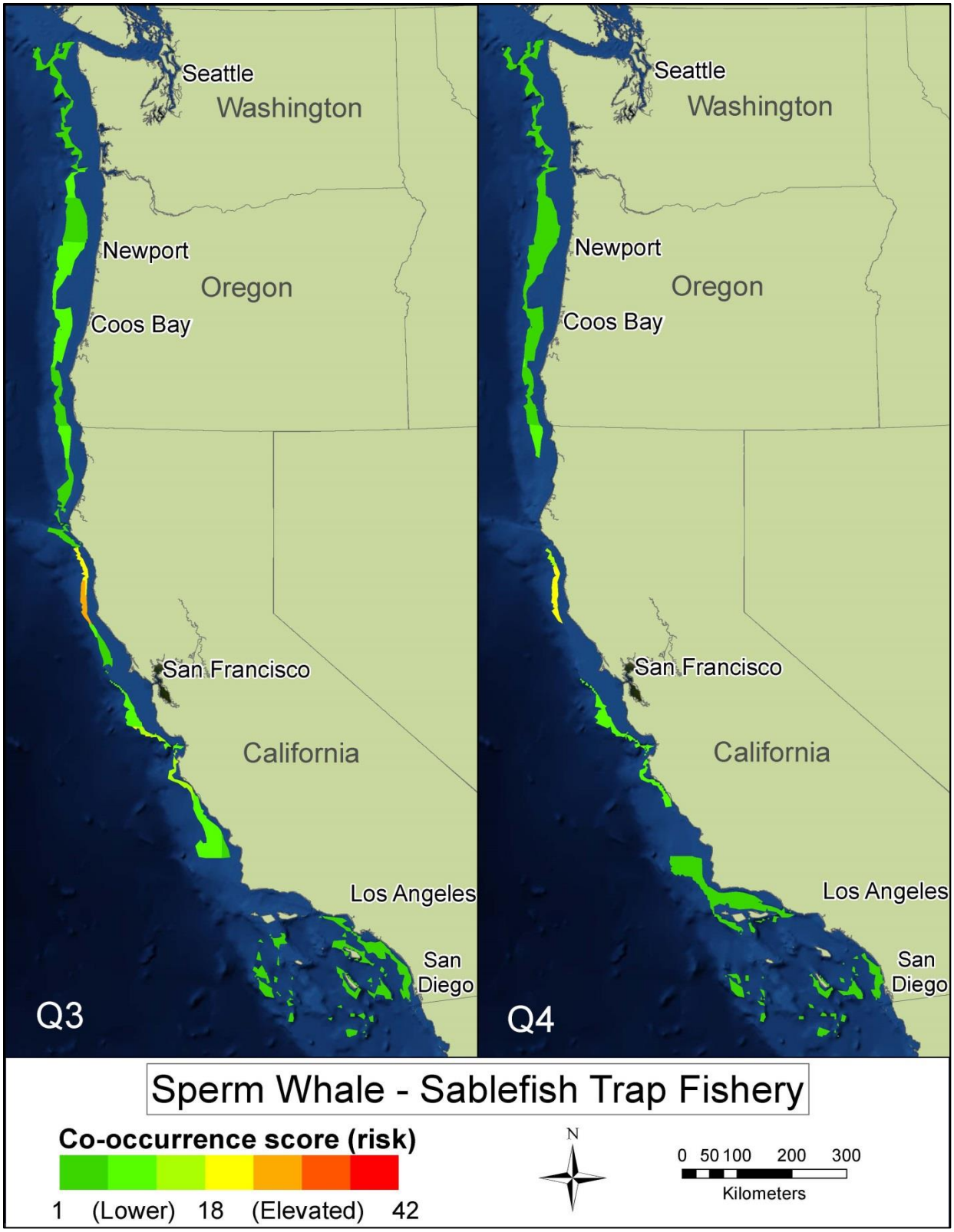

Figure 54 Co-occurrence of sperm whale density and sablefish trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

Figure 55 Co-occurrence of sperm whale density and spiny lobster trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

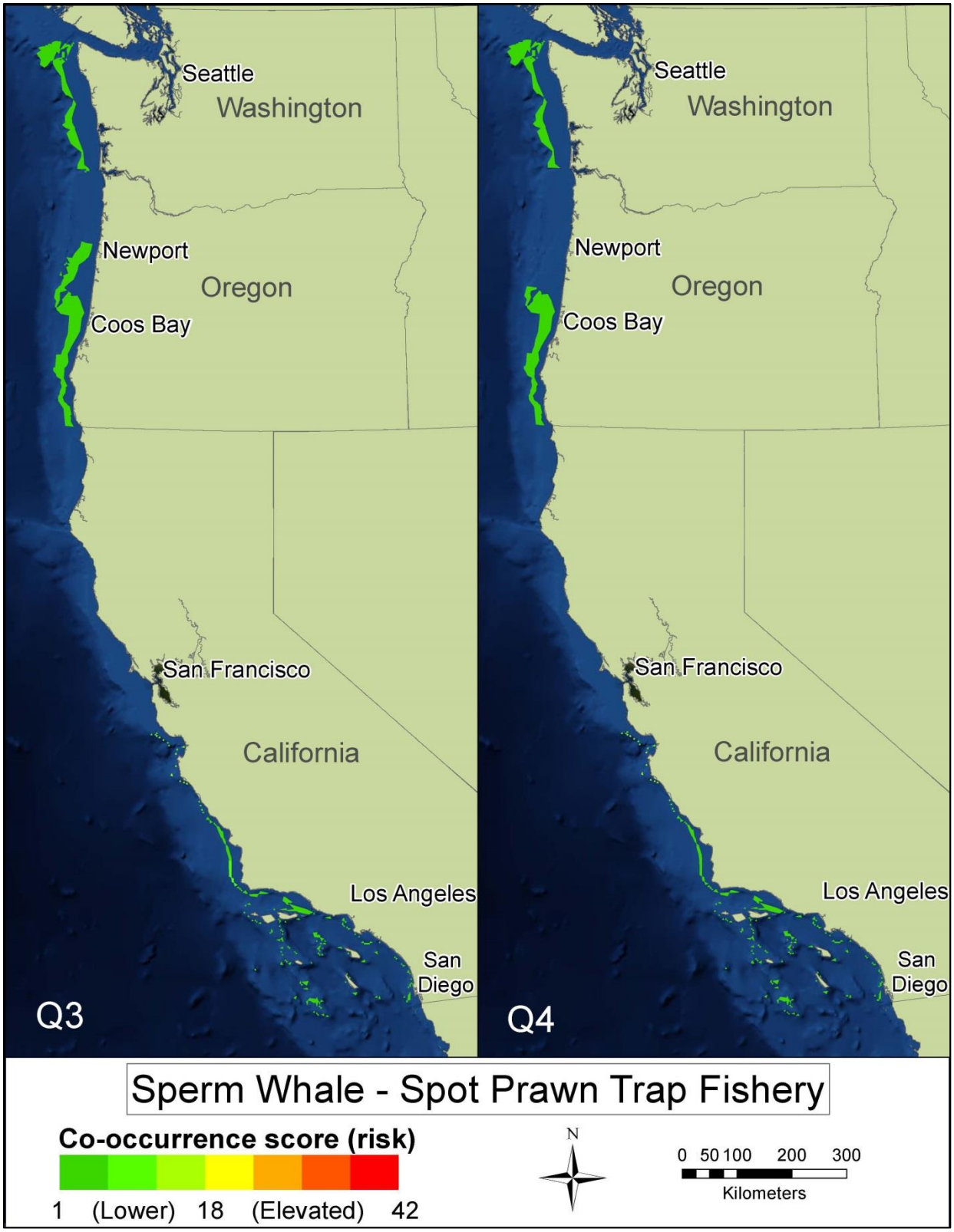

Figure 56 Co-occurrence of sperm whale density and spot prawn trap effort, shown for Quarter Three and Four. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

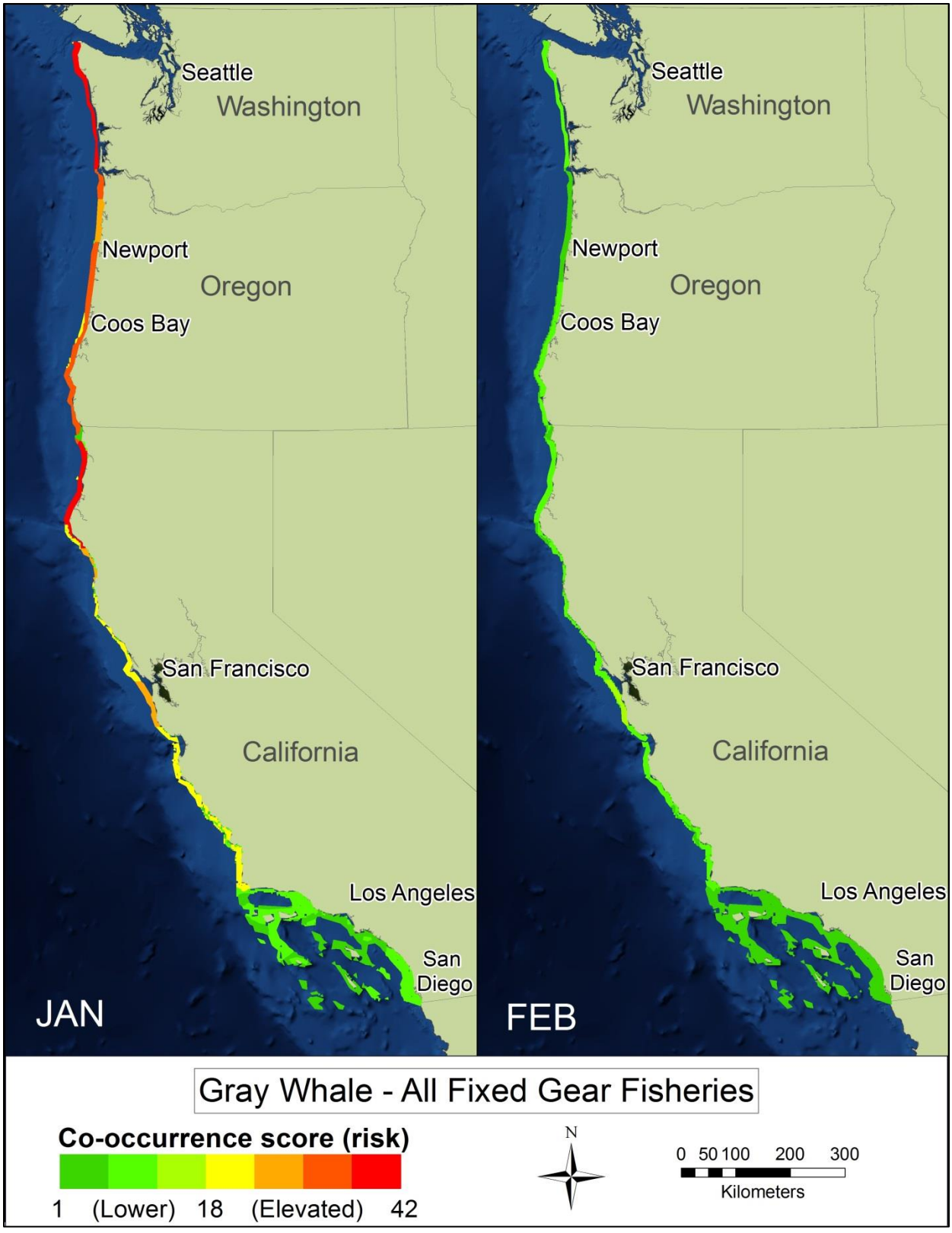

Figure 57 Co-occurrence of gray whale monthly density and fishing effort for all 11 fisheries shown for January and February. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

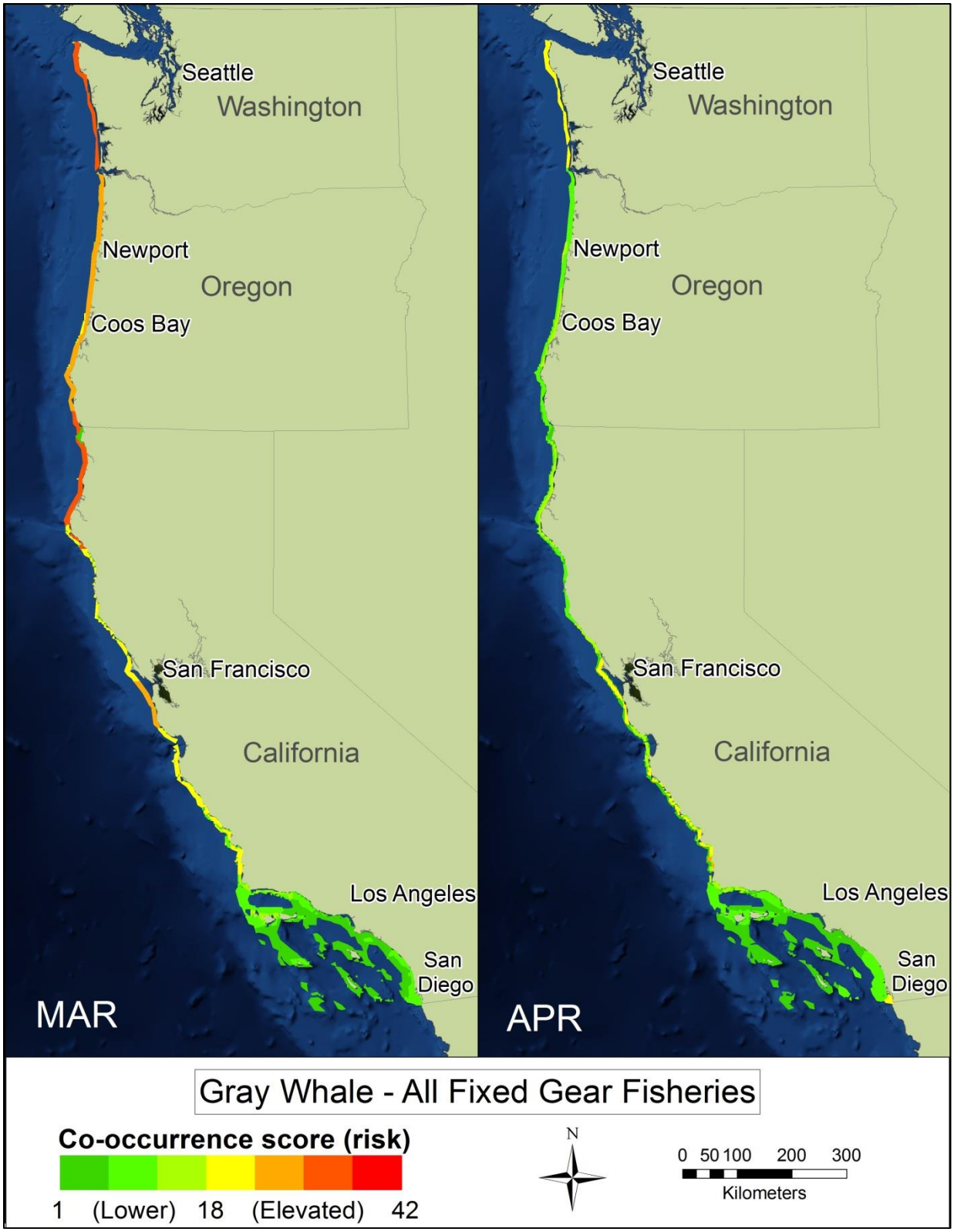

Figure 58 Co-occurrence of gray whale monthly density and fishing effort for all 11 fisheries shown for March and April. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

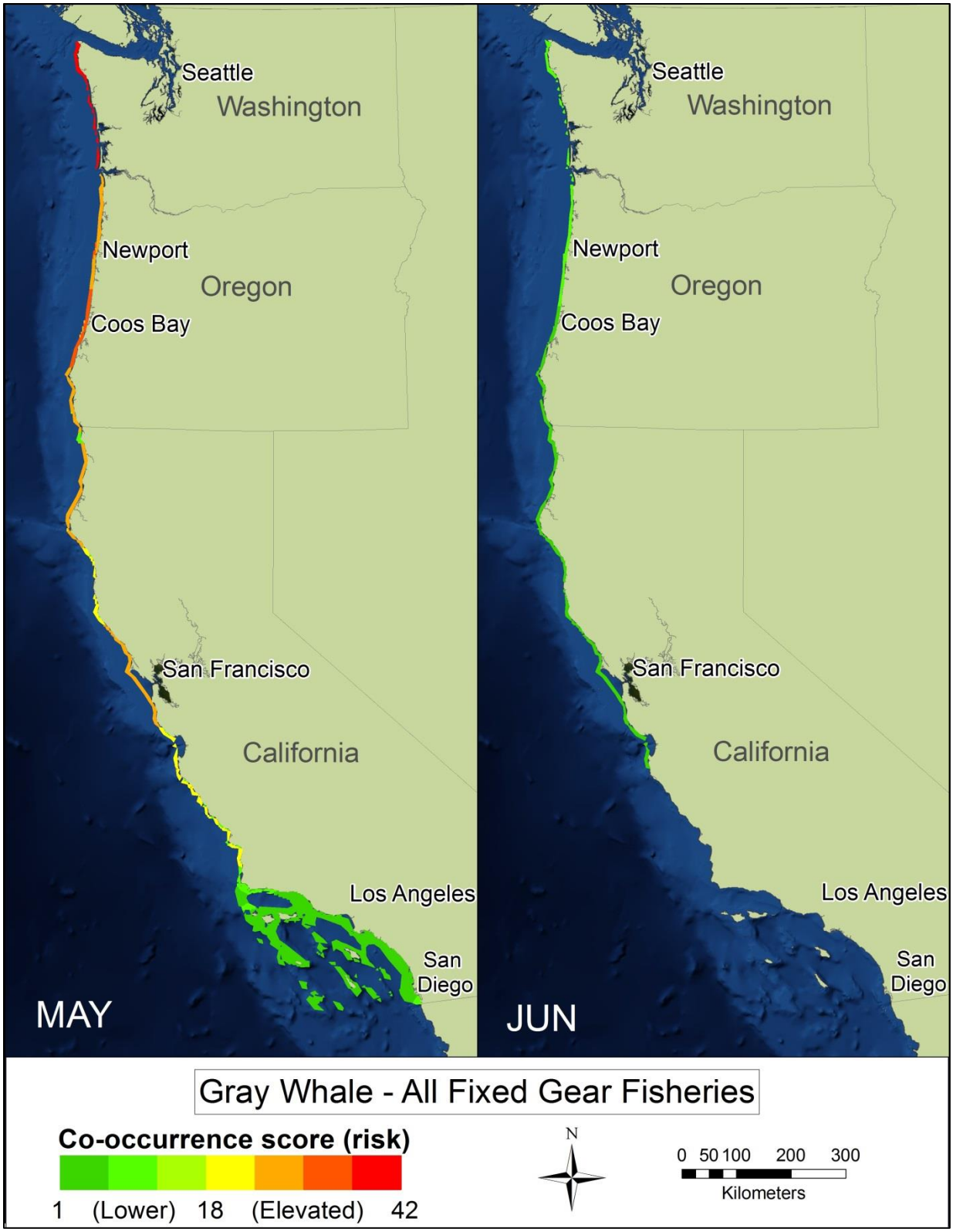

Figure 59 Co-occurrence of gray whale monthly density and fishing effort for all 11 fisheries shown for May and June. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

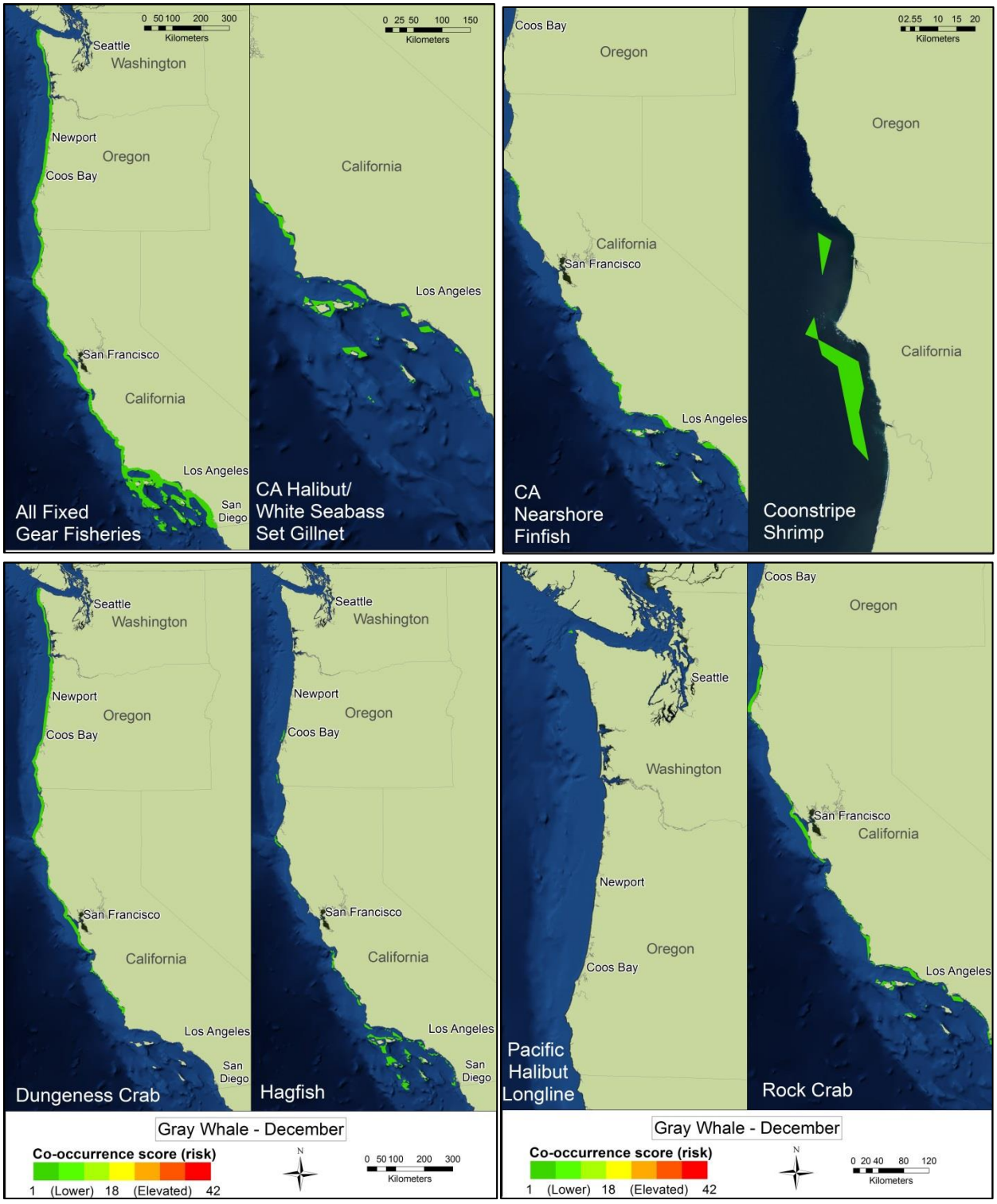

Figure 60 Co-occurrence of gray whale monthly density and fishing effort for all 11 fixed gear fisheries shown for December. Co-occurrence results of December gray whale density and California halibut/white seabass set gillnet, California nearshore live finfish trap, coonstripe shrimp trap, Dungeness crab trap, and hagfish trap, Pacific halibut longline, and rock crab trap effort. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

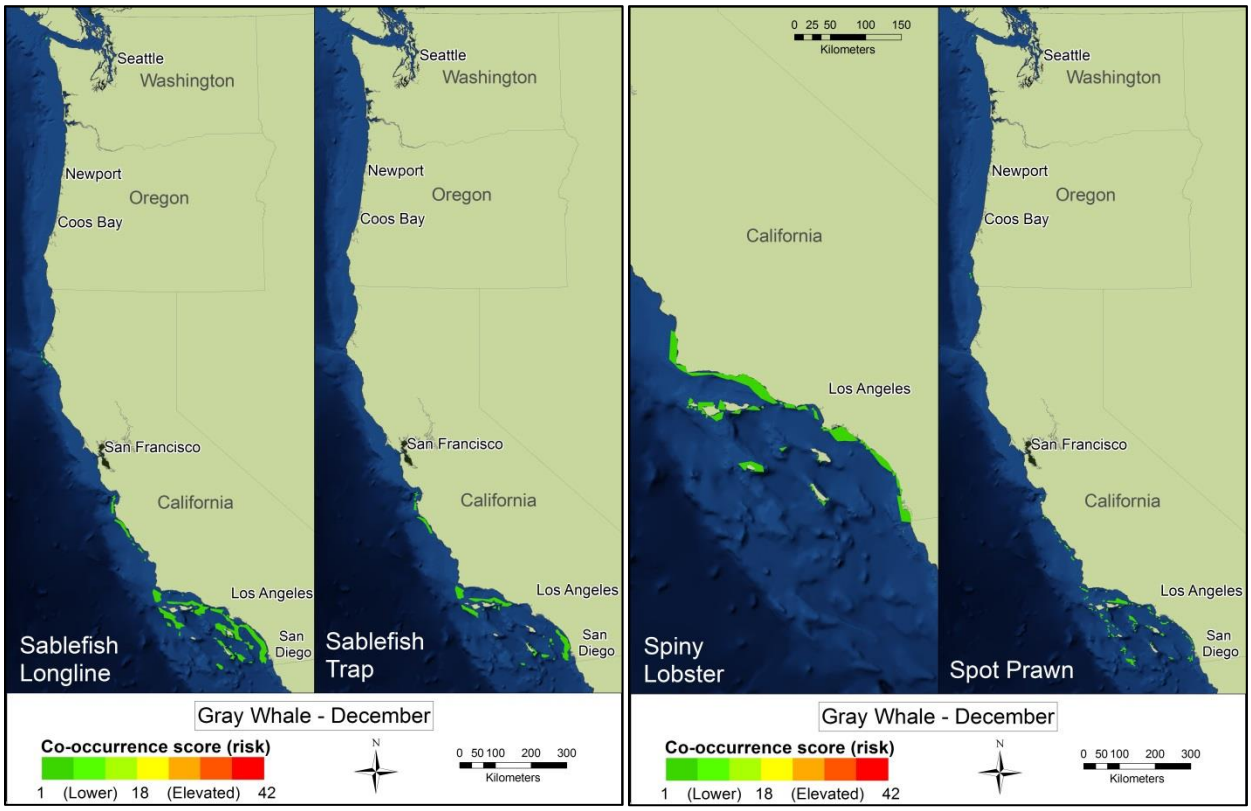

Figure 61 Co-occurrence of gray whale monthly density and fishing effort for all 11 fixed gear fisheries shown for December. Co-occurrence results of December gray whale density and sablefish longline, sablefish trap, spiny lobster, and spot prawn trap effort. The co-occurrence scores, from 1-to-42, are shown from green to red, with red representing relatively higher entanglement risk.

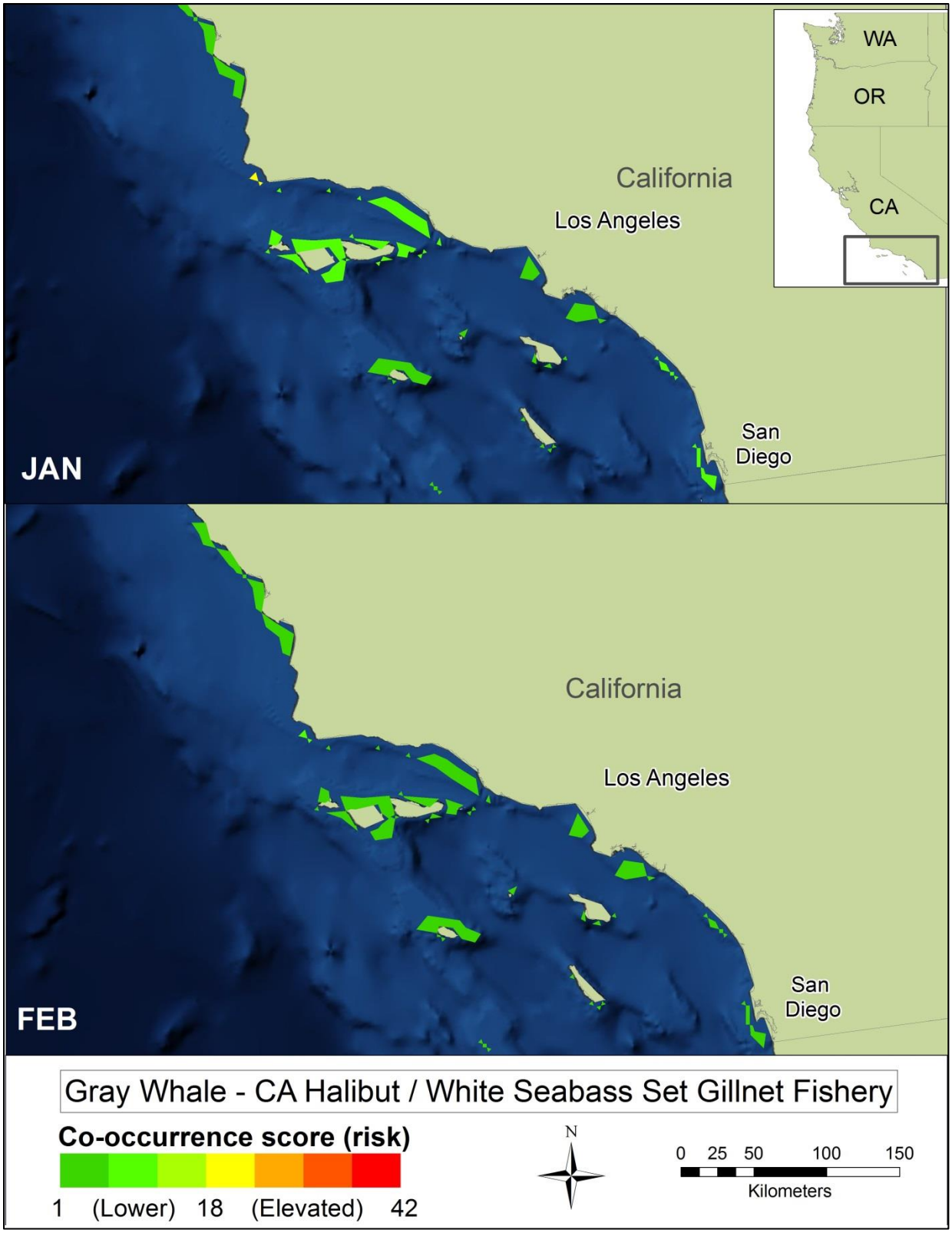

Figure 62 Co-occurrence of gray whale migration and California halibut/white seabass set gillnet effort, shown monthly for January and February. December map is in Figure 60.

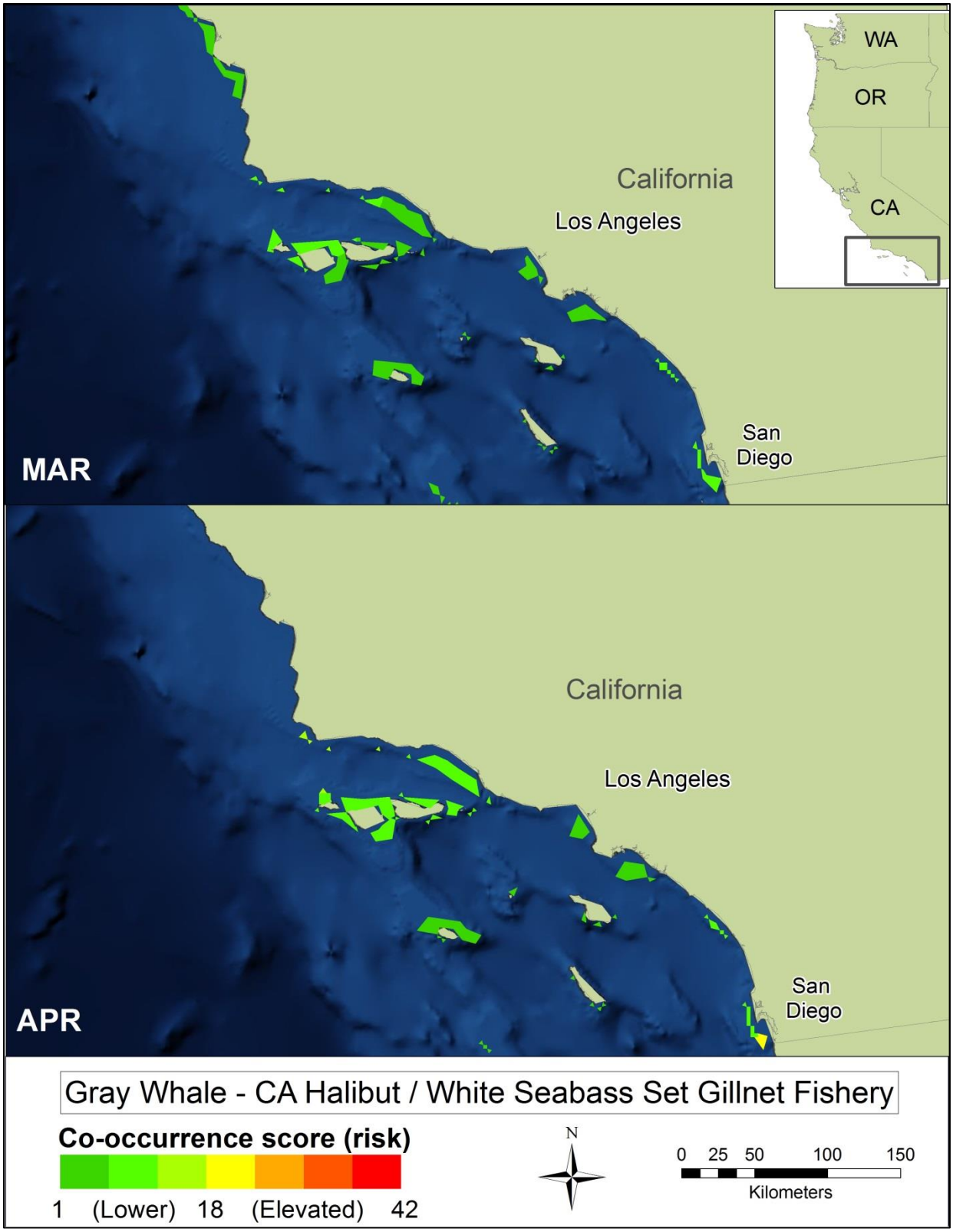

Figure 63 Co-occurrence of gray whale migration and California halibut/white seabass set gillnet effort, shown monthly for March and April. December map is in Figure 60.

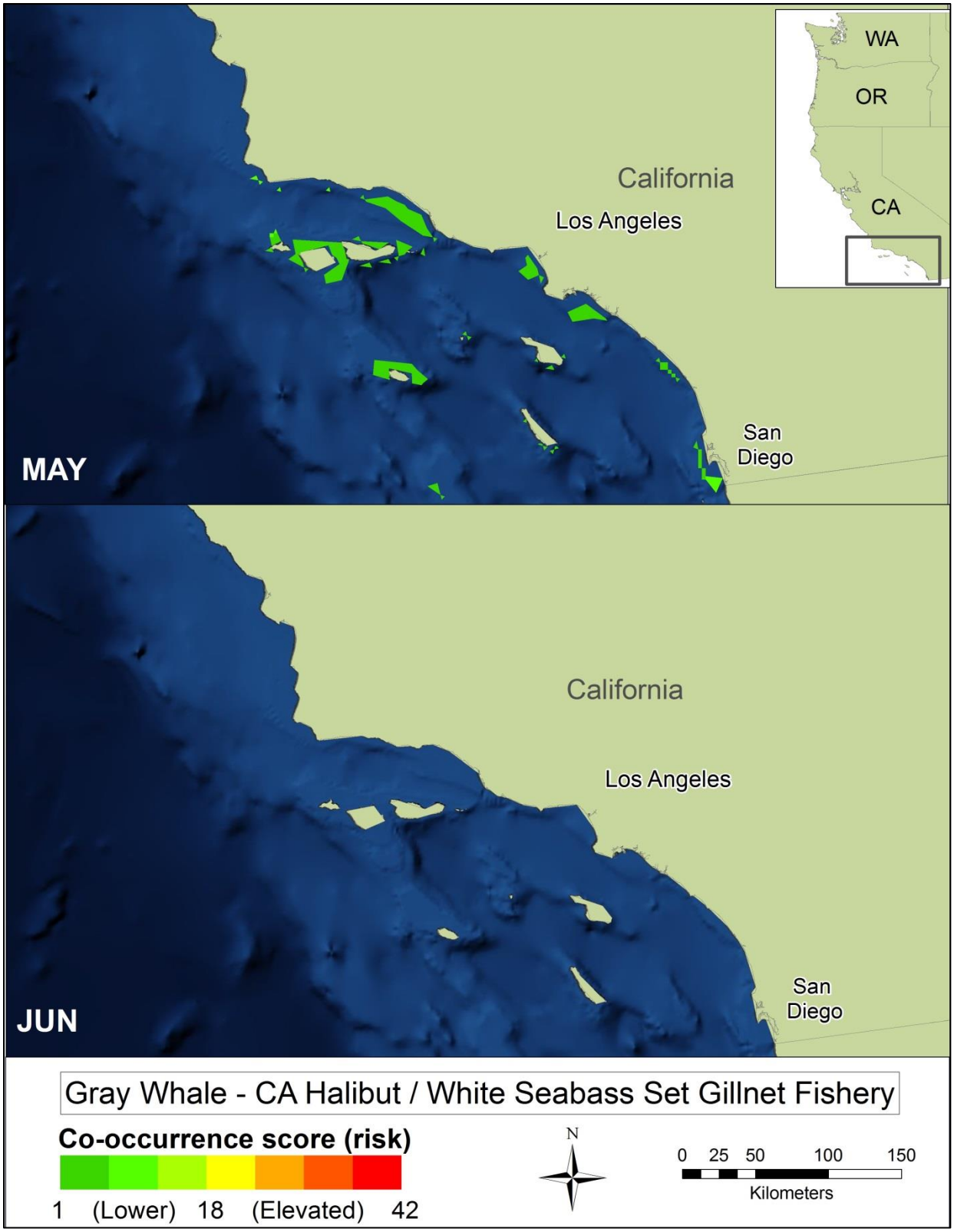

Figure 64 Co-occurrence of gray whale migration and California halibut/white seabass set gillnet effort, shown monthly for May and June. December map is in Figure 60.

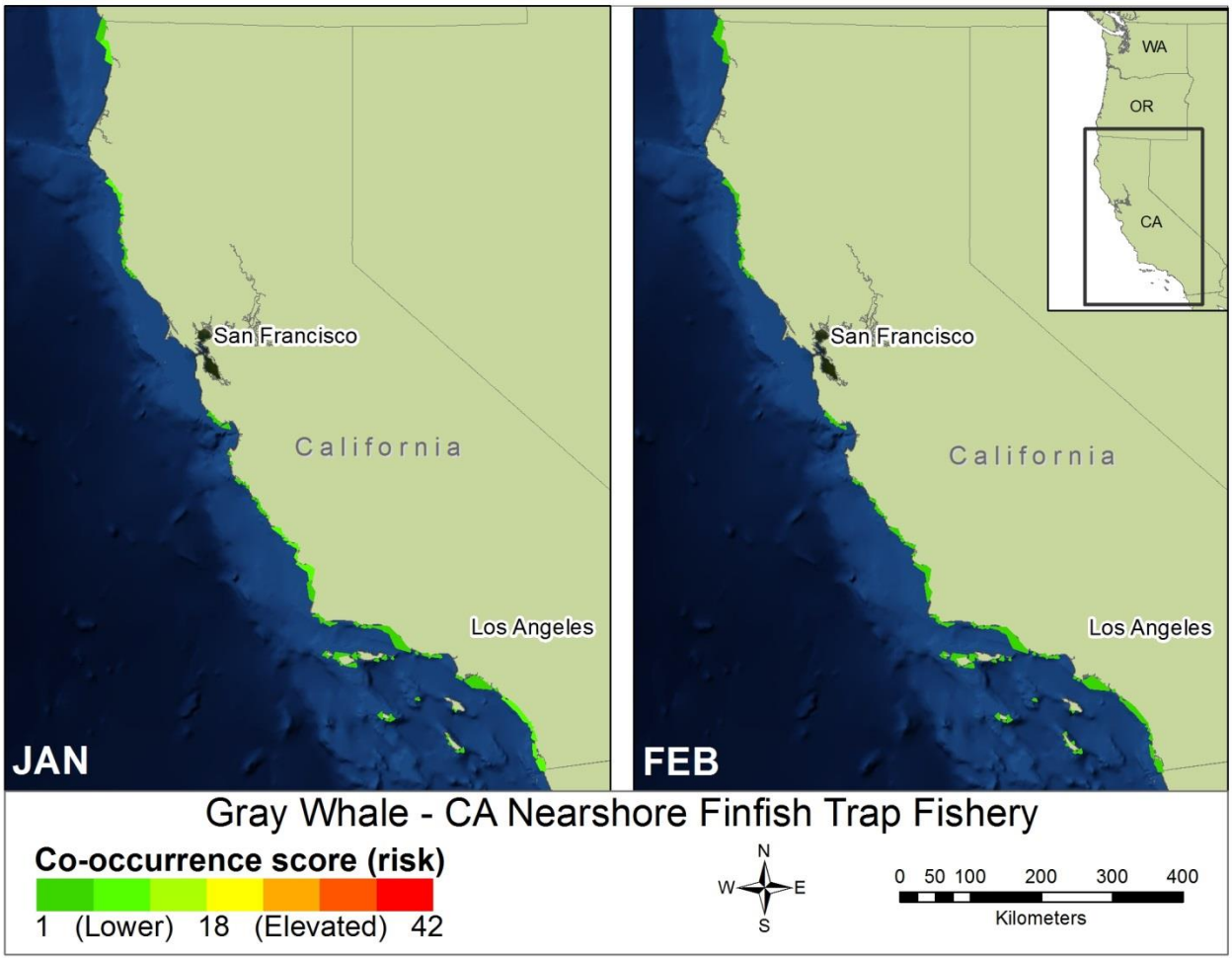

Figure 65 Co-occurrence of gray whale migration and California nearshore live finfish trap effort, shown monthly for January and February. December is in Figure 60.

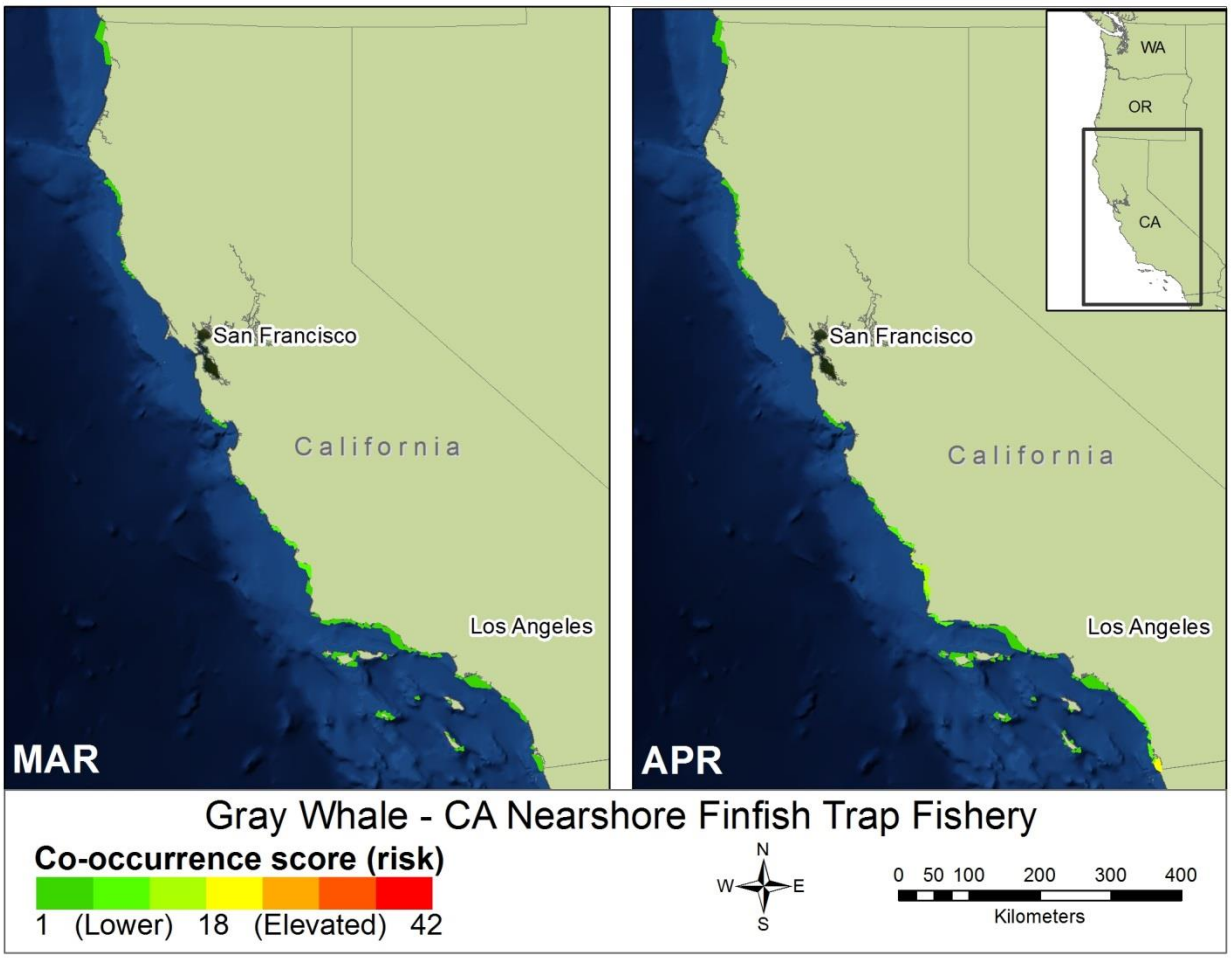

Figure 66 Co-occurrence of gray whale migration and California nearshore live finfish trap effort, shown monthly for March and April. December is in Figure 60.

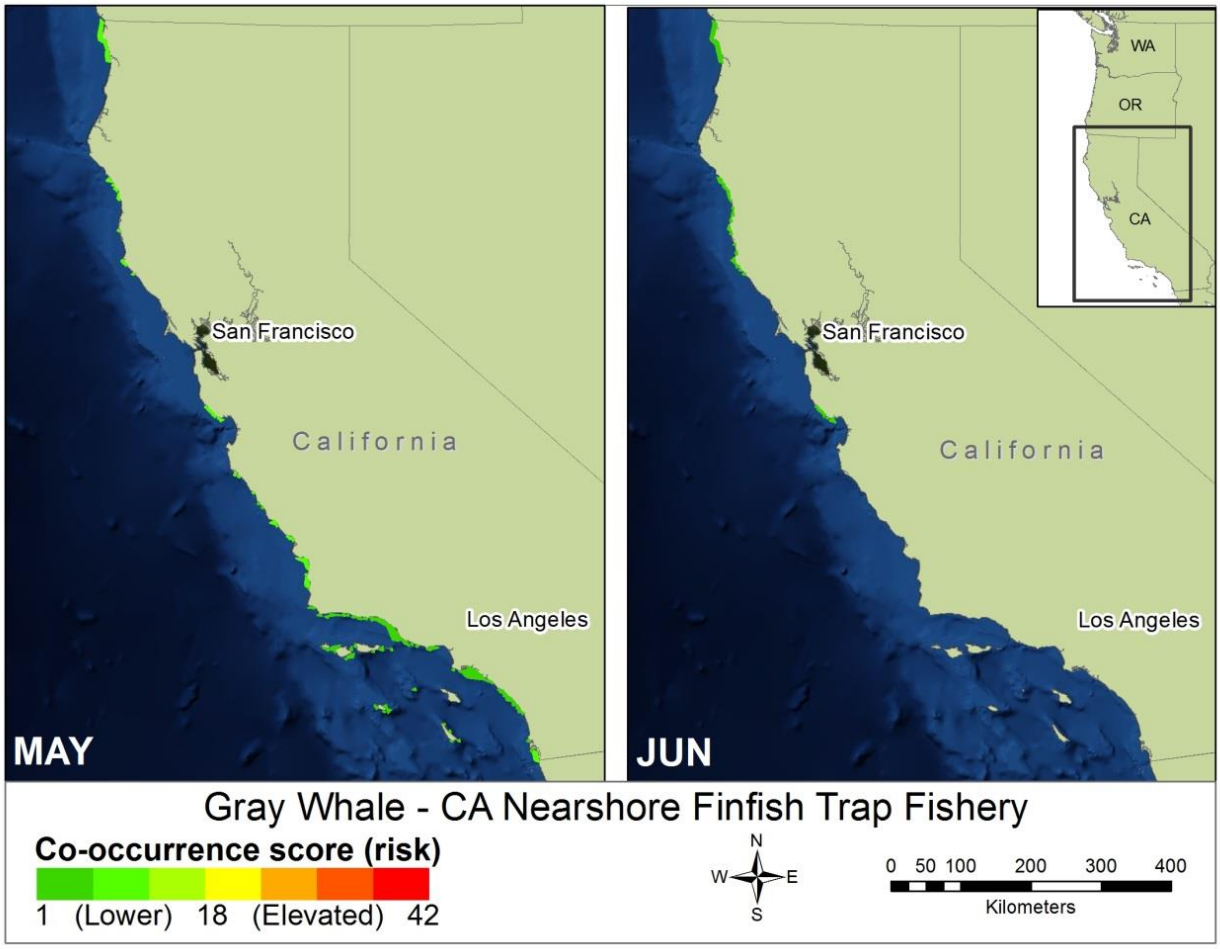

Figure 67 Co-occurrence of gray whale migration and California nearshore live finfish trap effort, shown for May and June. December is in Figure 60.

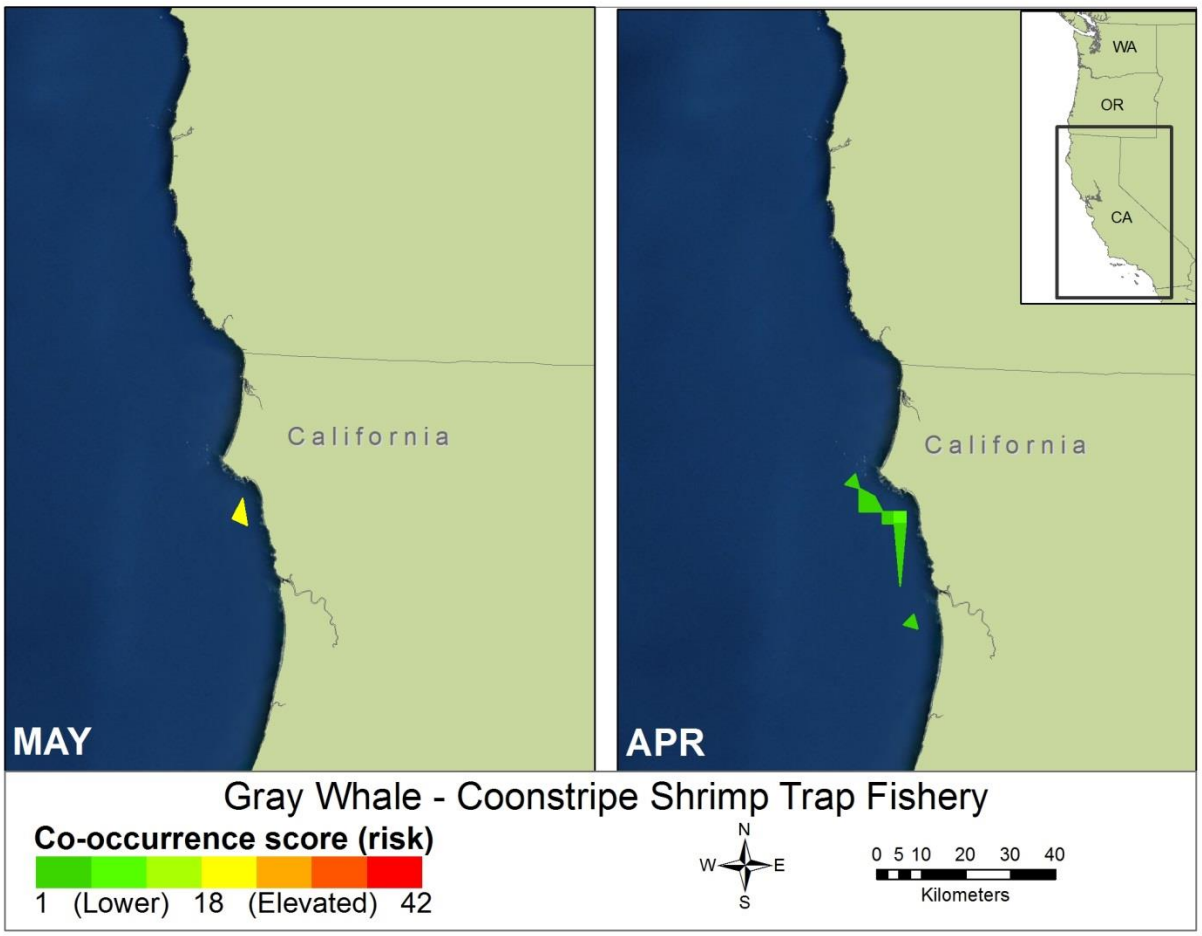

Figure 68 Co-occurrence of gray whale migration and coonstripe shrimp trap effort, shown for April and May. December map can be found in Figure 60. The coonstripe shrimp trap fishery is not open in Quarter One.

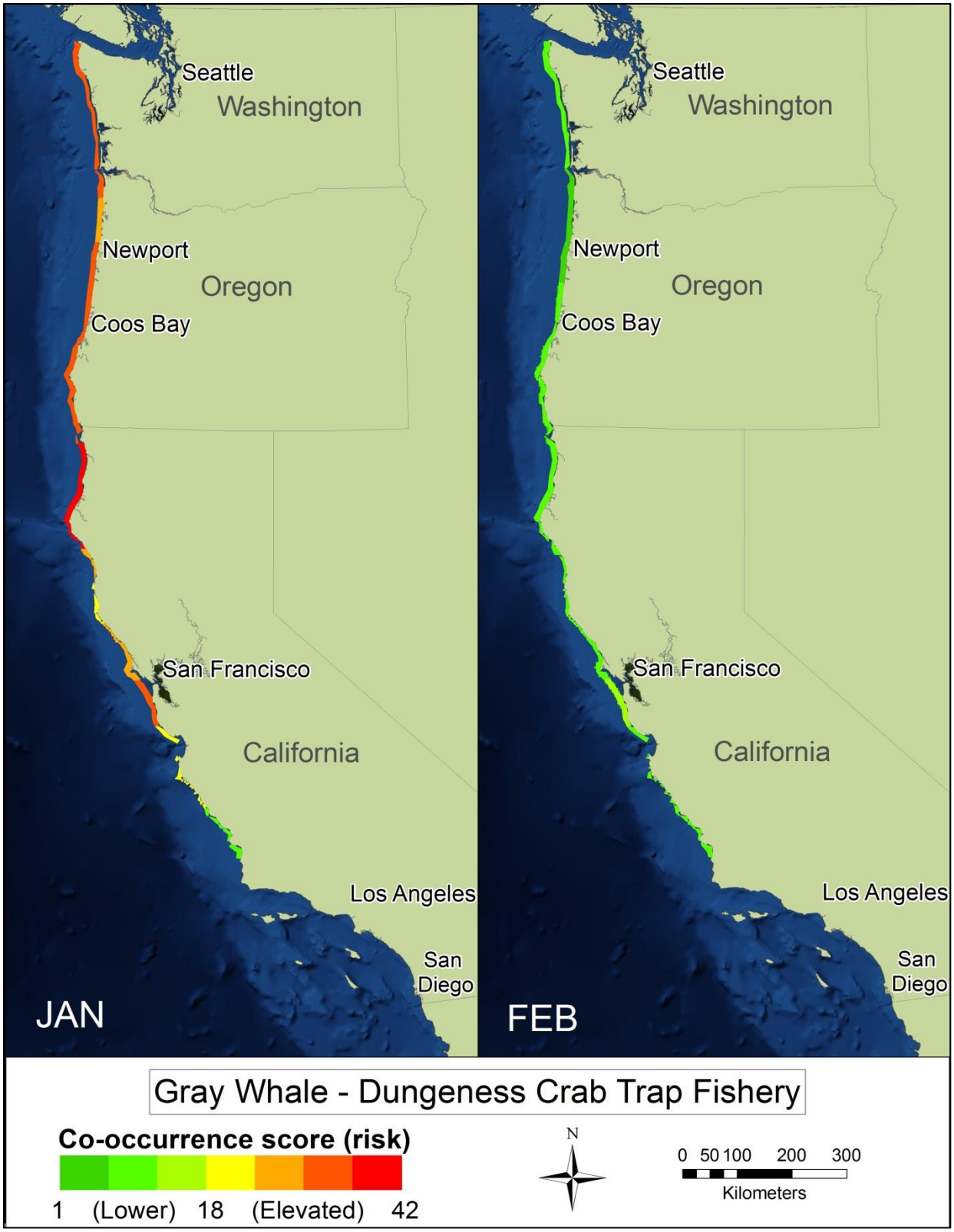

Figure 69 Co-occurrence of gray whale migration and Dungeness crab trap effort, shown monthly for January and February. December map can be found in Figure 60.

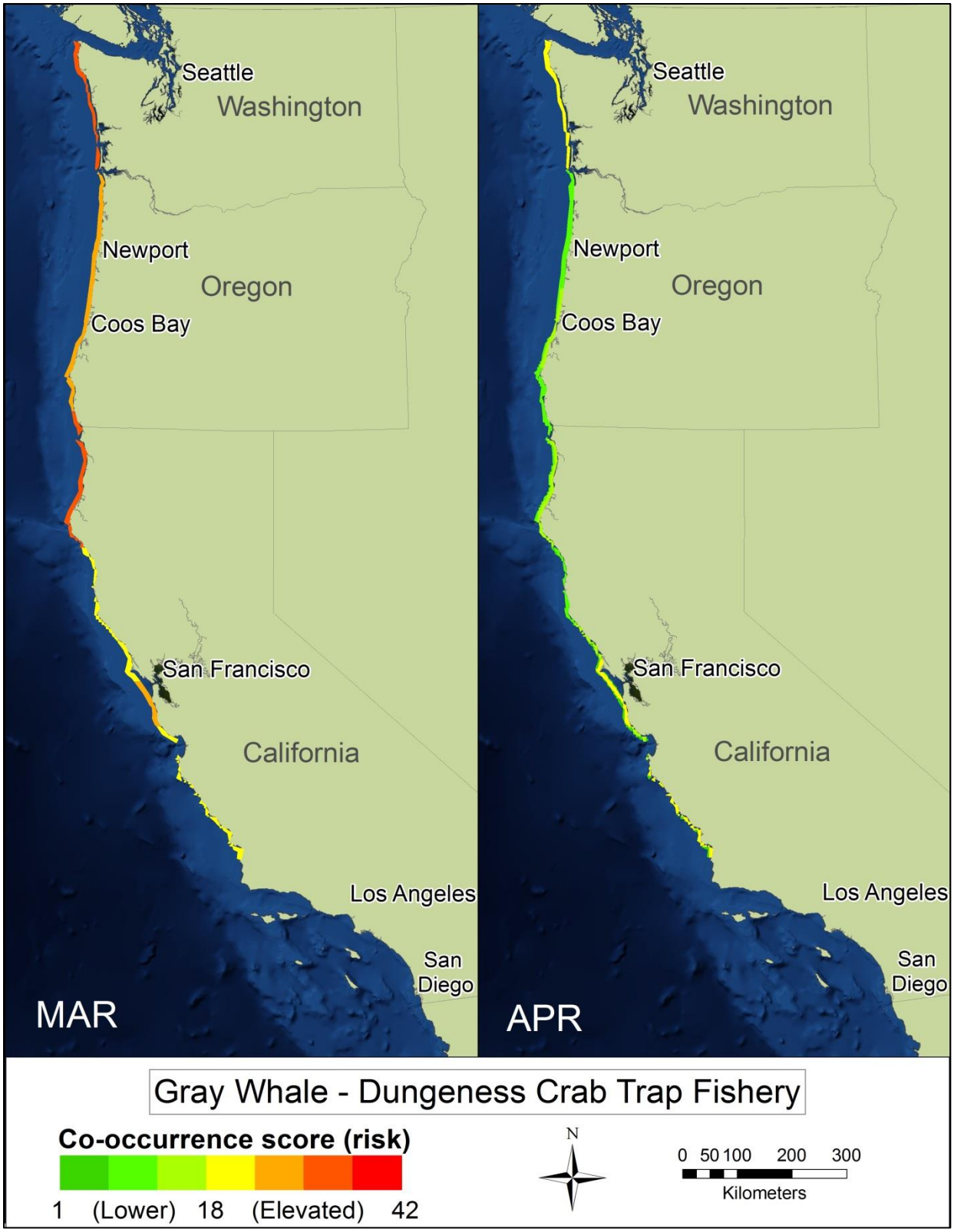

Figure 70 Co-occurrence of gray whale migration and Dungeness crab trap effort, shown monthly for March and April. December map can be found in Figure 60.

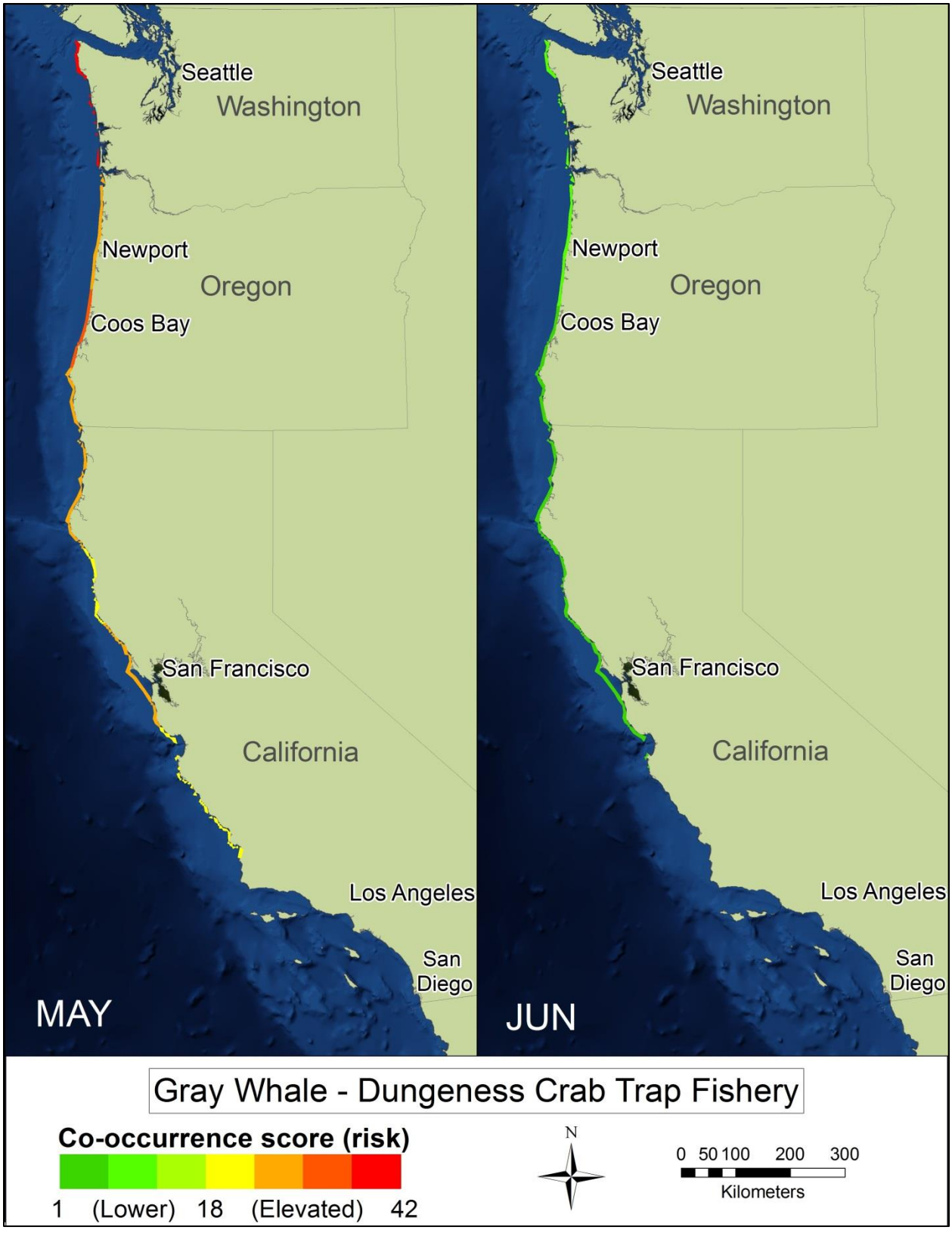

Figure 71 Co-occurrence of gray whale migration and Dungeness crab trap effort, shown monthly for May and June. December map can be found in Figure 60.

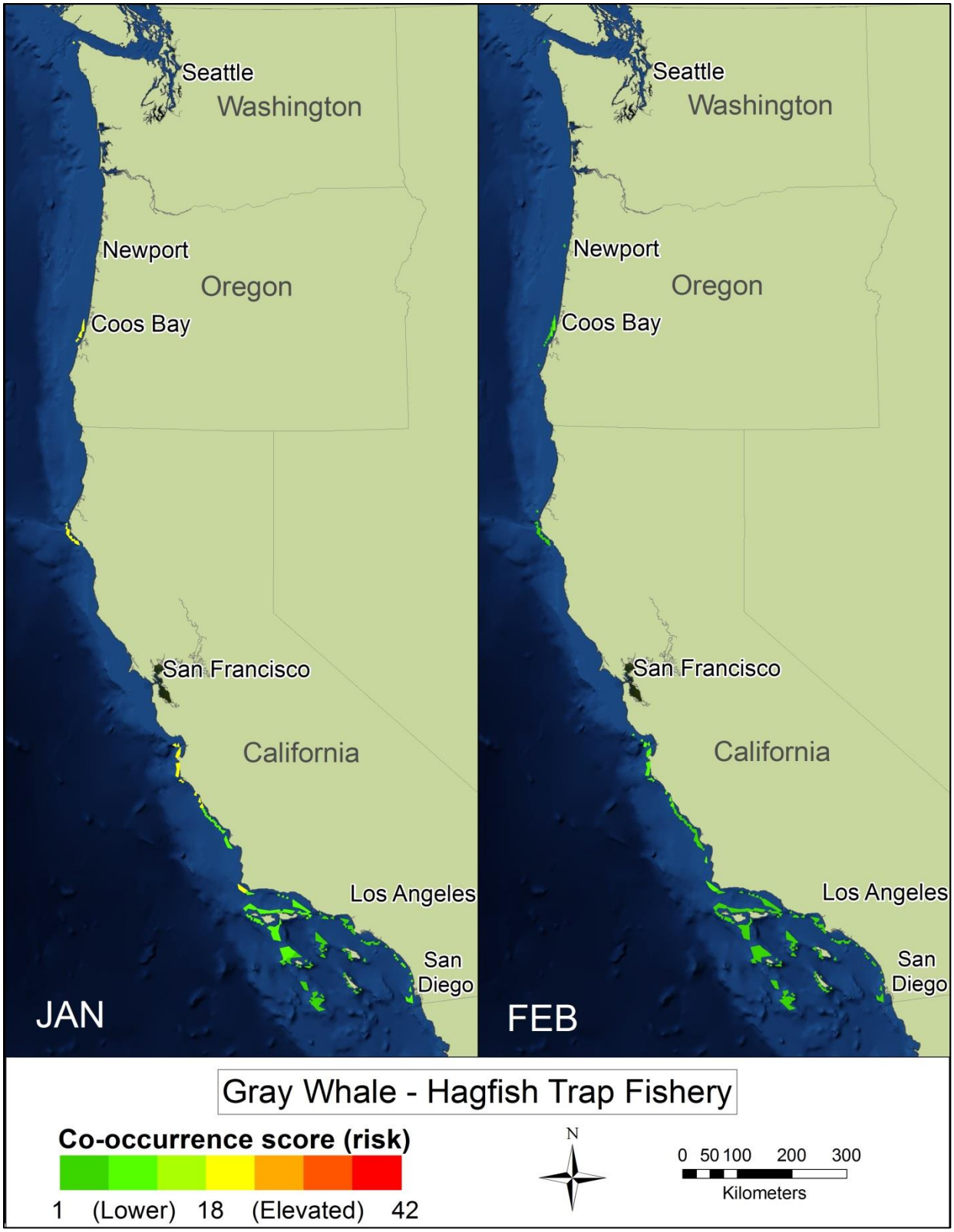

Figure 72 Co-occurrence of gray whale migration and hagfish trap effort, shown monthly for January and February. December map can be found in Figure 60.

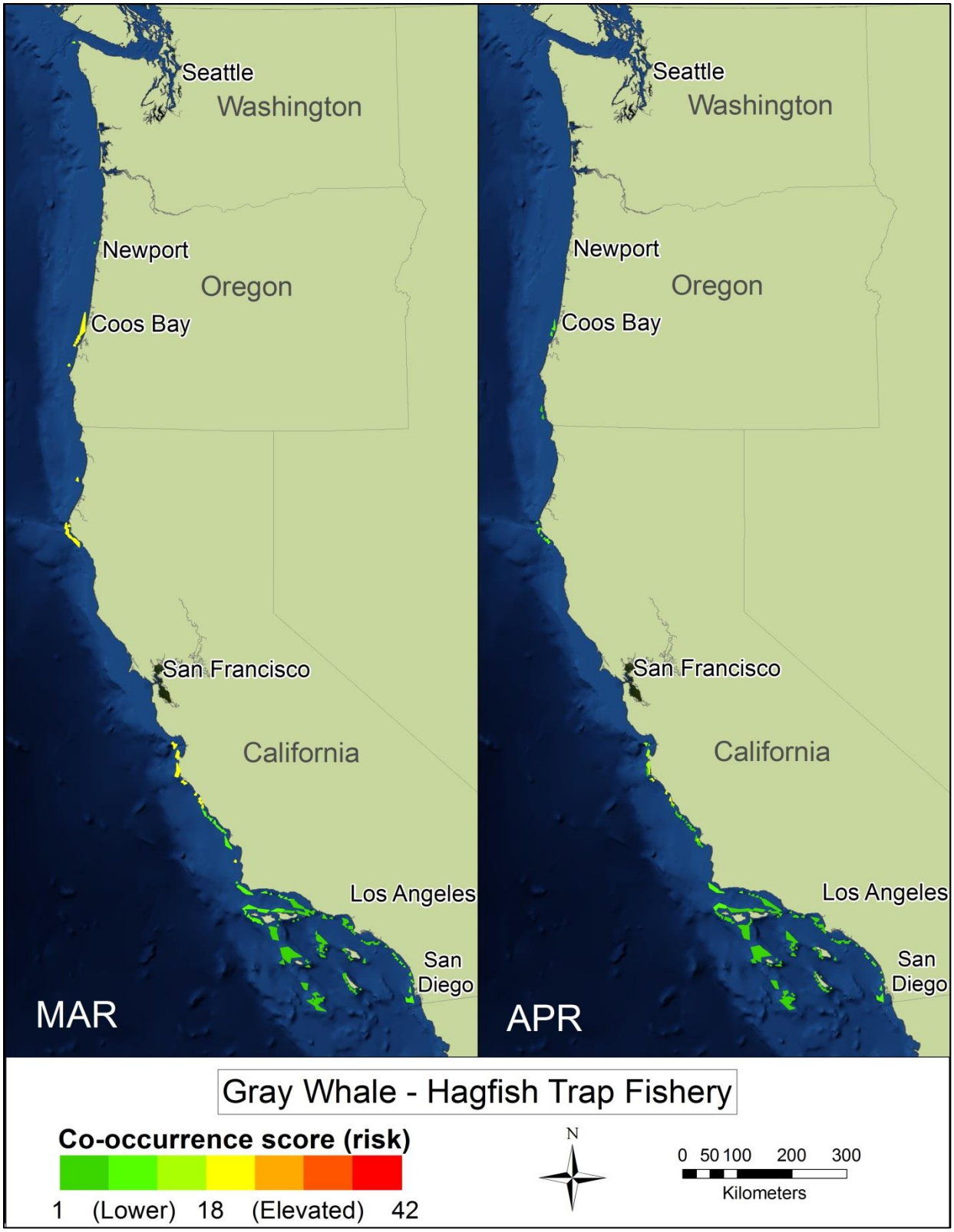

Figure 73 Co-occurrence of gray whale migration and hagfish trap effort, shown monthly for March and April. December map can be found in Figure 60.

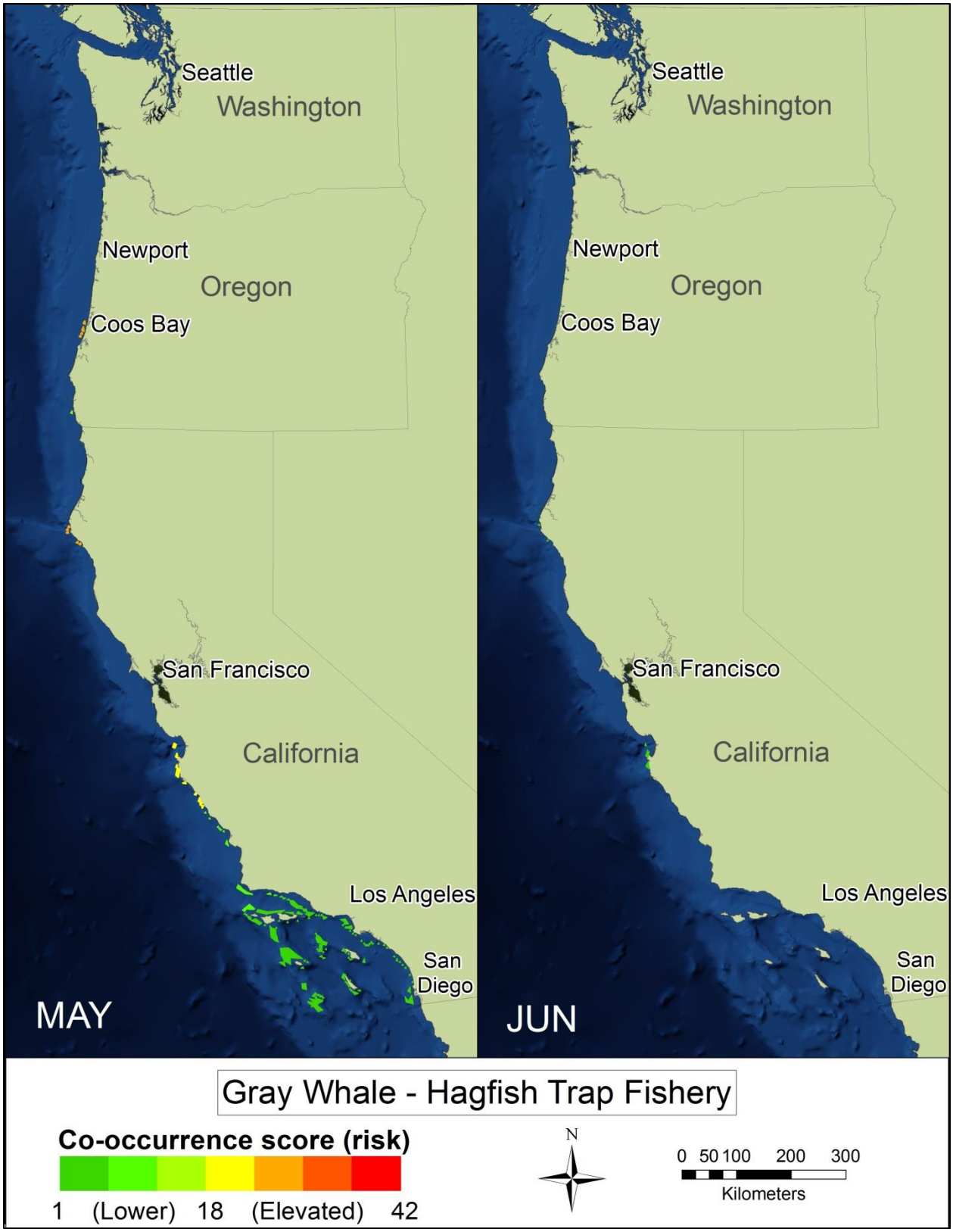

Figure 74 Co-occurrence of gray whale migration and hagfish trap effort, shown monthly for May and June. December map can be found in Figure 60.

Figure 75 Co-occurrence of gray whale migration and Pacific halibut longline effort, shown monthly for January and February. December map can be found in Figure 60.

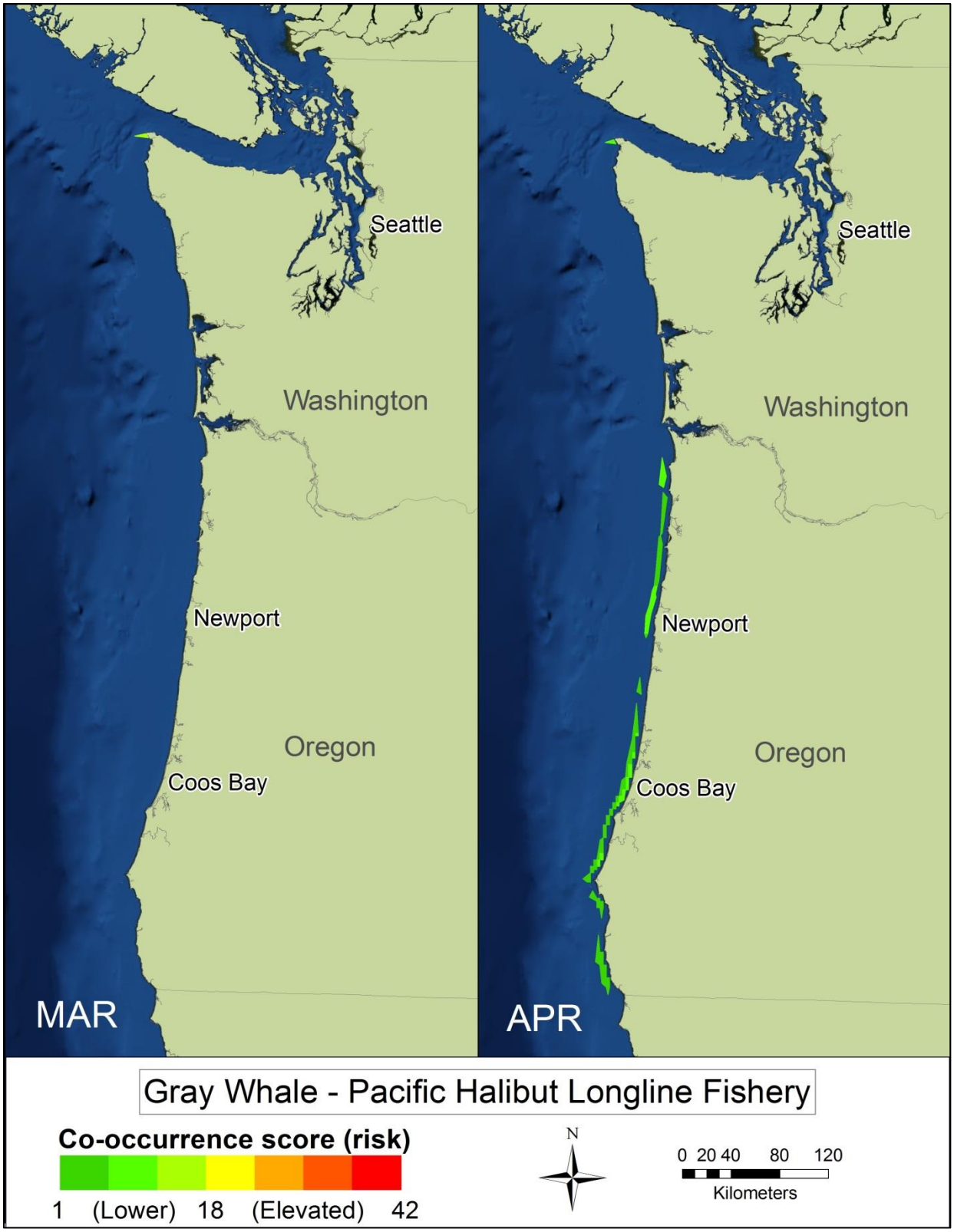

Figure 76 Co-occurrence of gray whale migration and Pacific halibut longline effort, shown monthly for March and April. December map can be found in Figure 60.

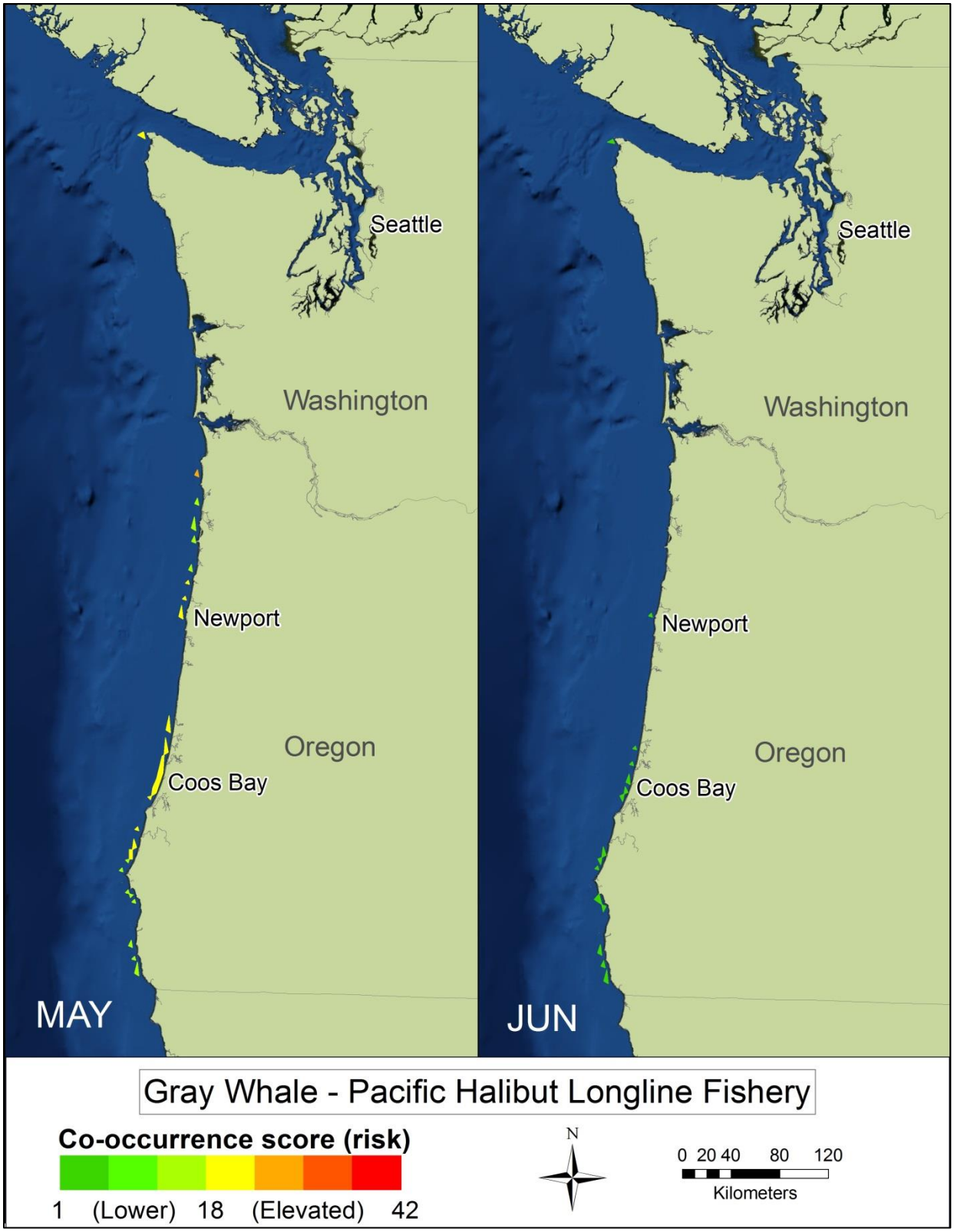

Figure 77 Co-occurrence of gray whale migration and Pacific halibut longline effort, shown monthly for May and June. December map can be found in Figure 60.

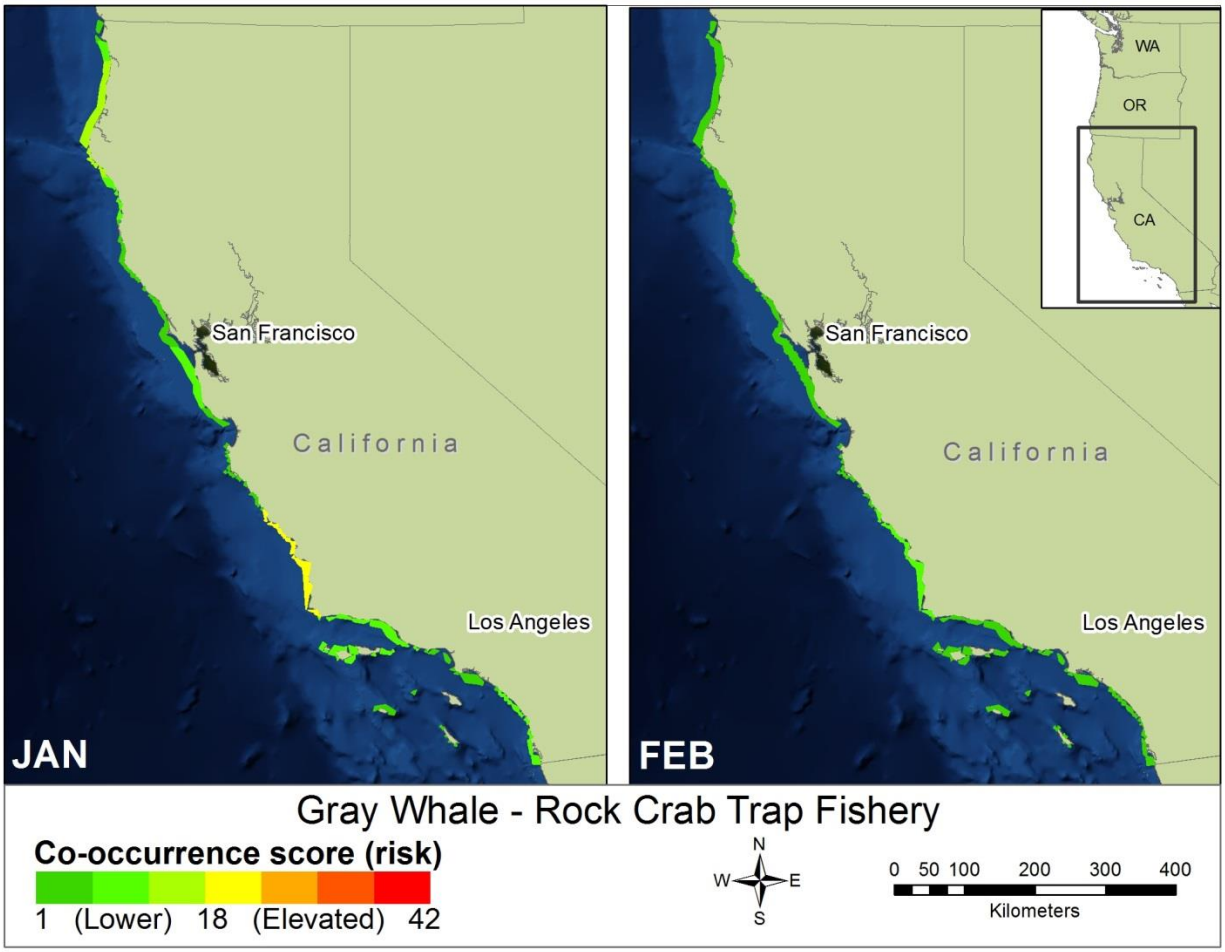

Figure 78 Co-occurrence of gray whale migration and rock crab trap effort, shown monthly for January and February. December map can be found in Figure 60.

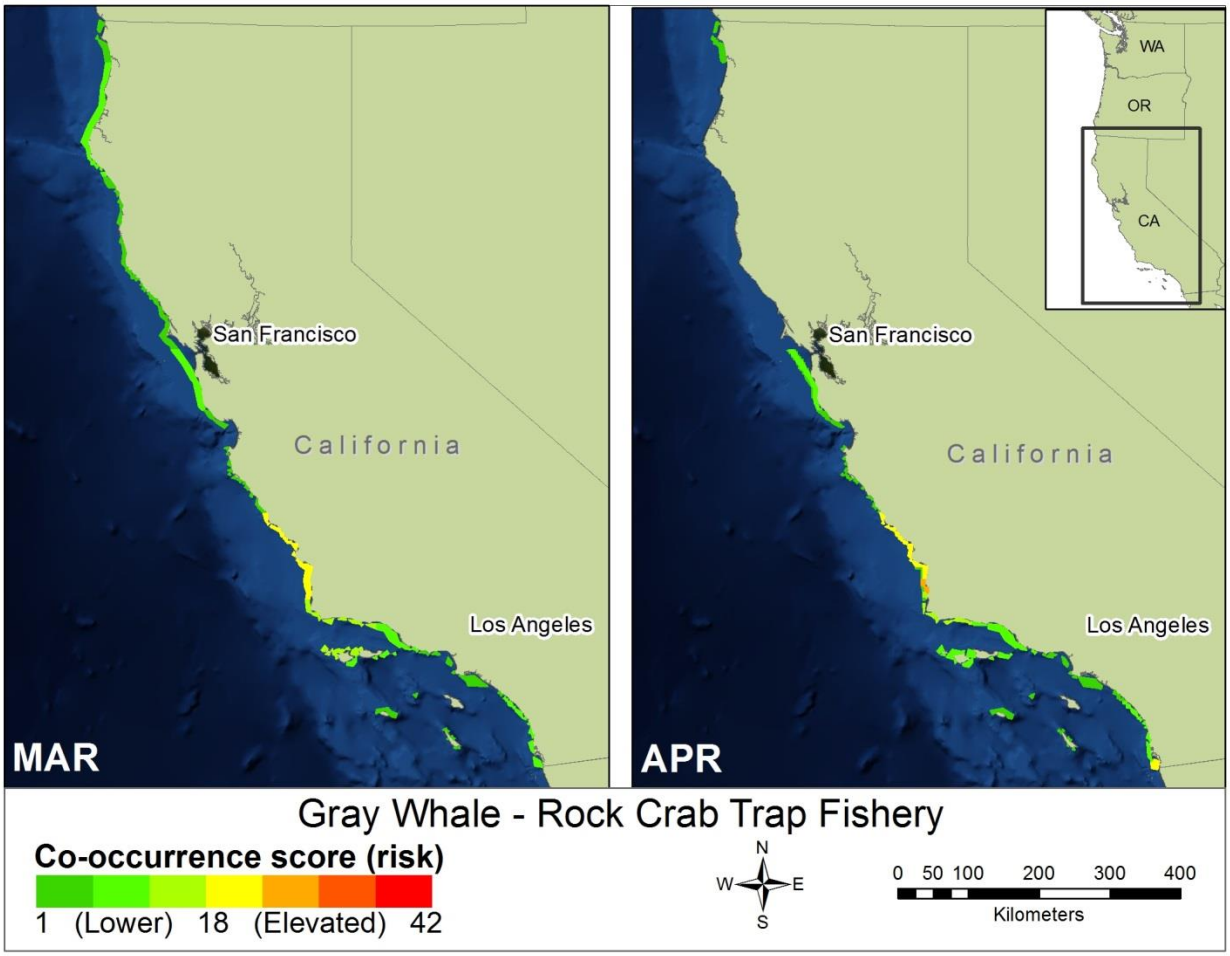

Figure 79 Co-occurrence of gray whale migration and rock crab trap effort, shown monthly for March and April. December map can be found in Figure 60.

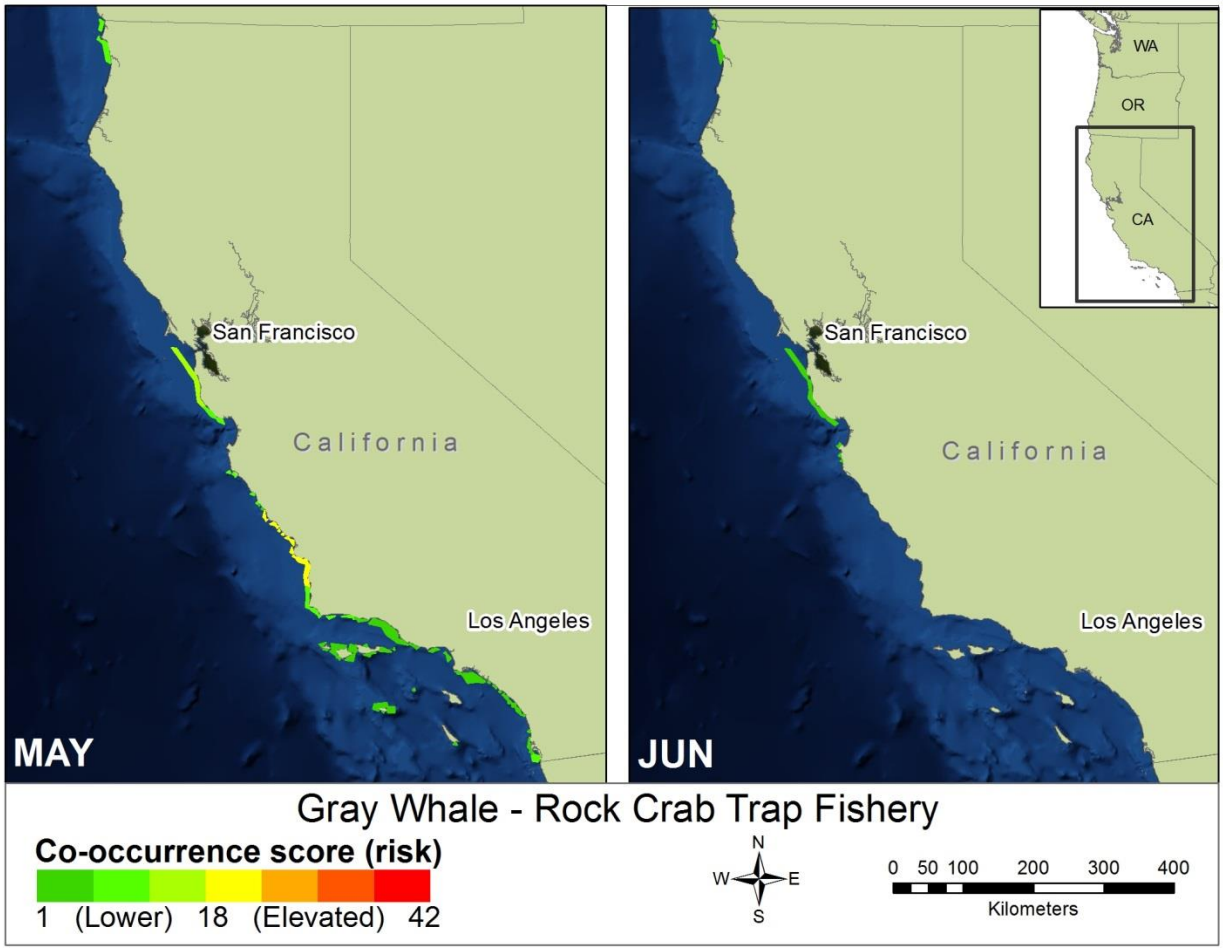

Figure 80 Co-occurrence of gray whale migration and rock crab trap effort, shown monthly for May and June. December map can be found in Figure 60.

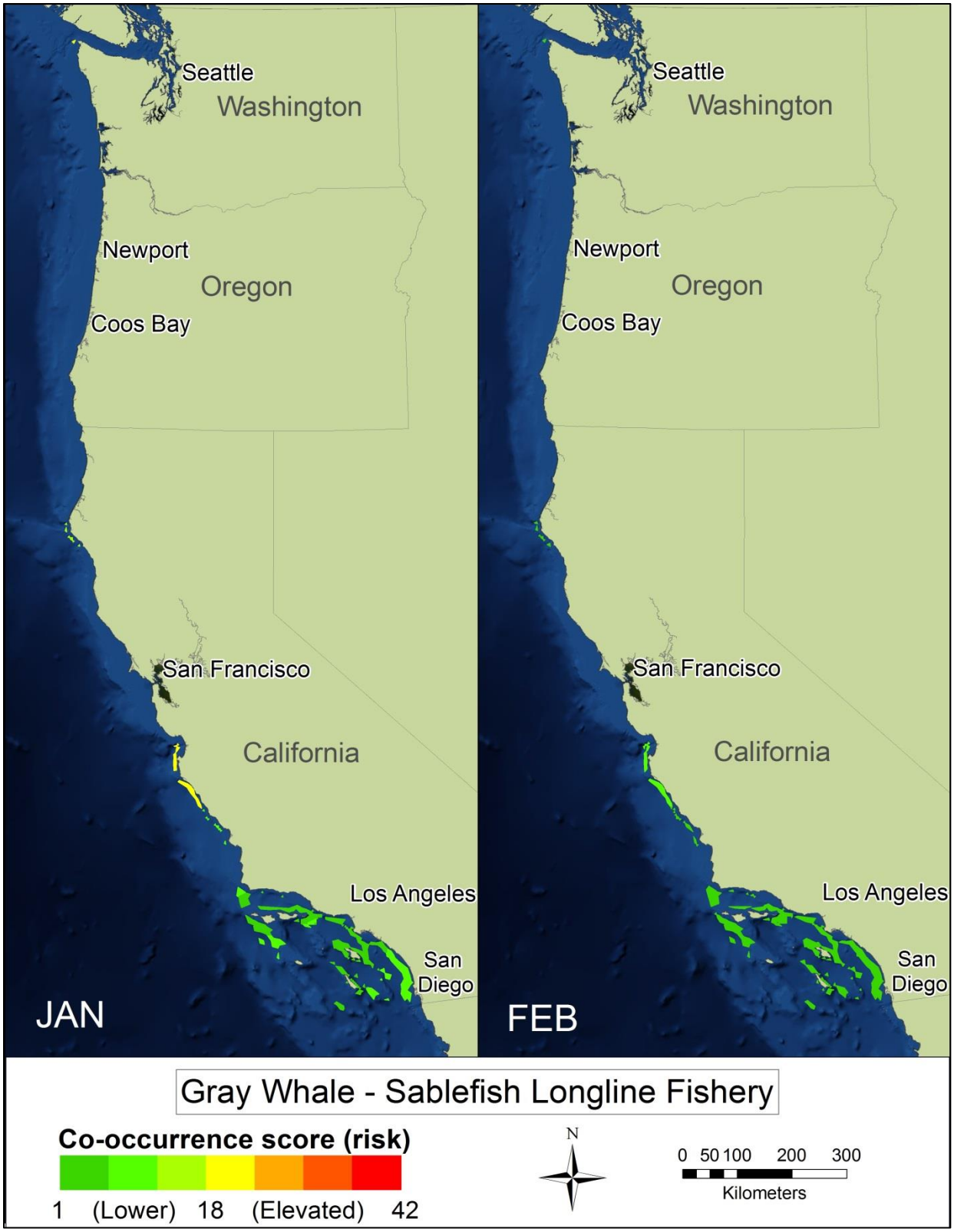

Figure 81 Co-occurrence of gray whale migration and sablefish longline effort, shown monthly for January and February. December map can be found in Figure 61.

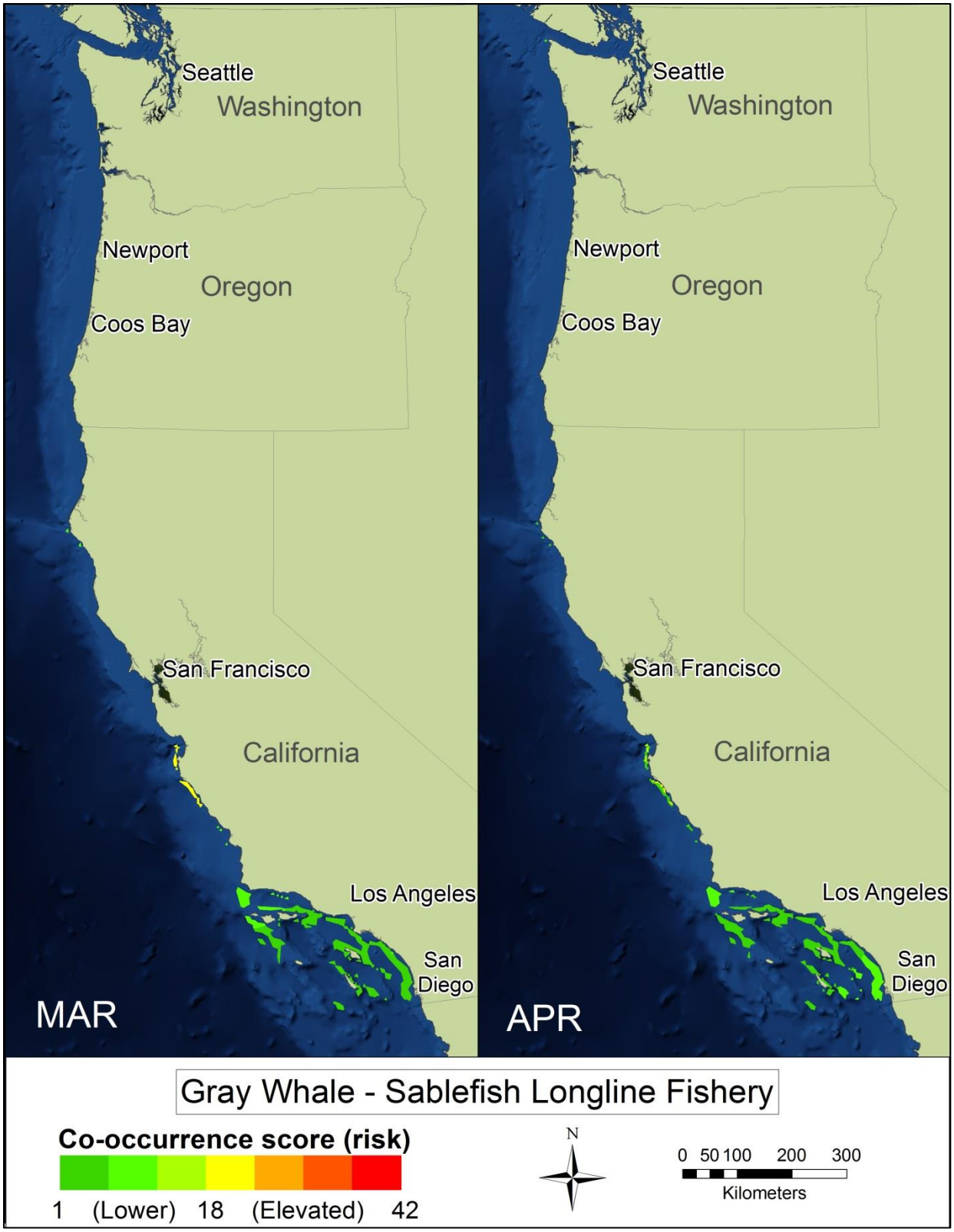

Figure 82 Co-occurrence of gray whale migration and sablefish longline effort, shown monthly for March and April. December map can be found in Figure 61.

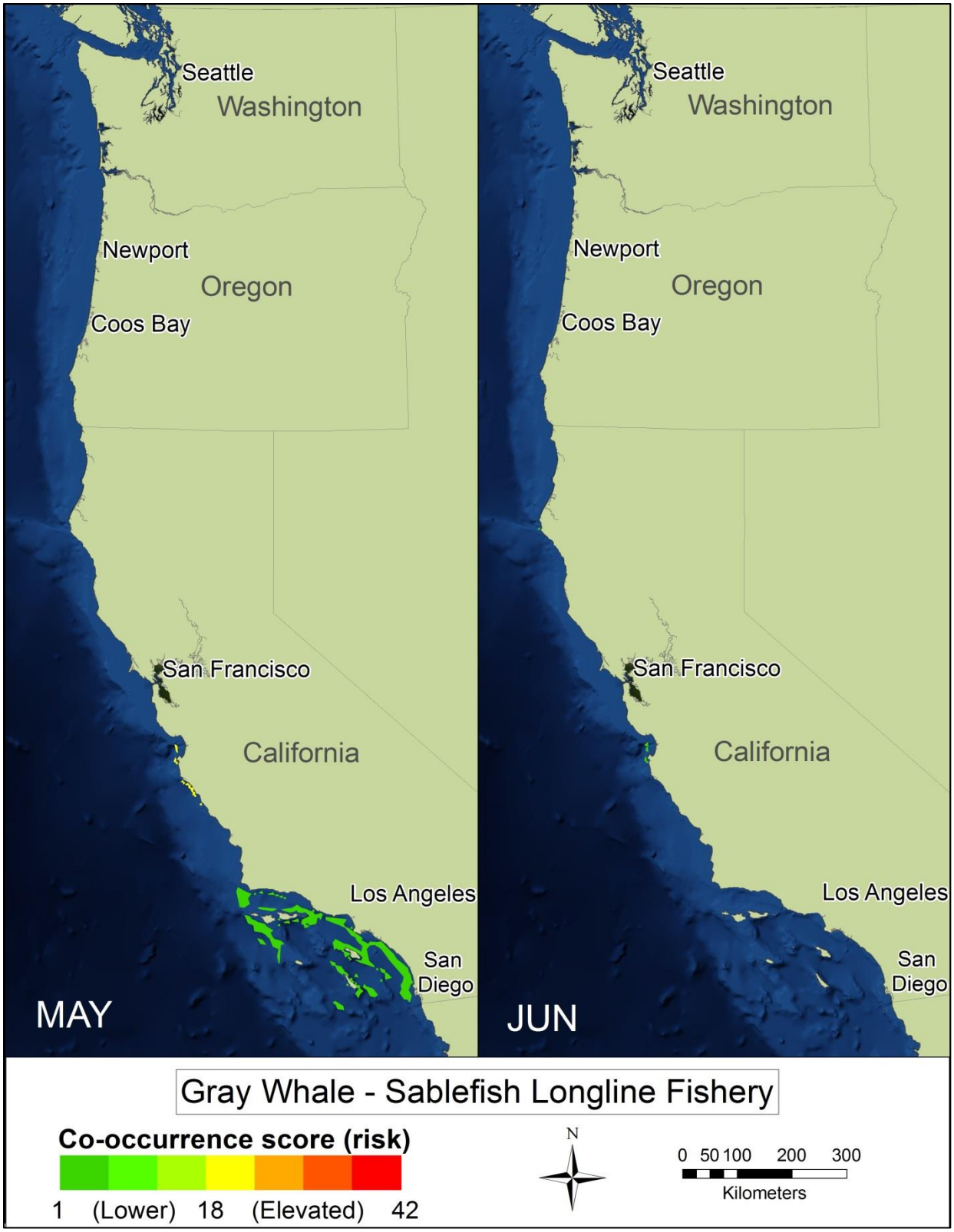

Figure 83 Co-occurrence of gray whale migration and sablefish longline effort, shown monthly for May and June. December map can be found in Figure 61.

Figure 84 Co-occurrence of gray whale migration and sablefish trap effort, shown monthly for January and February. December map can be found in Figure 61.

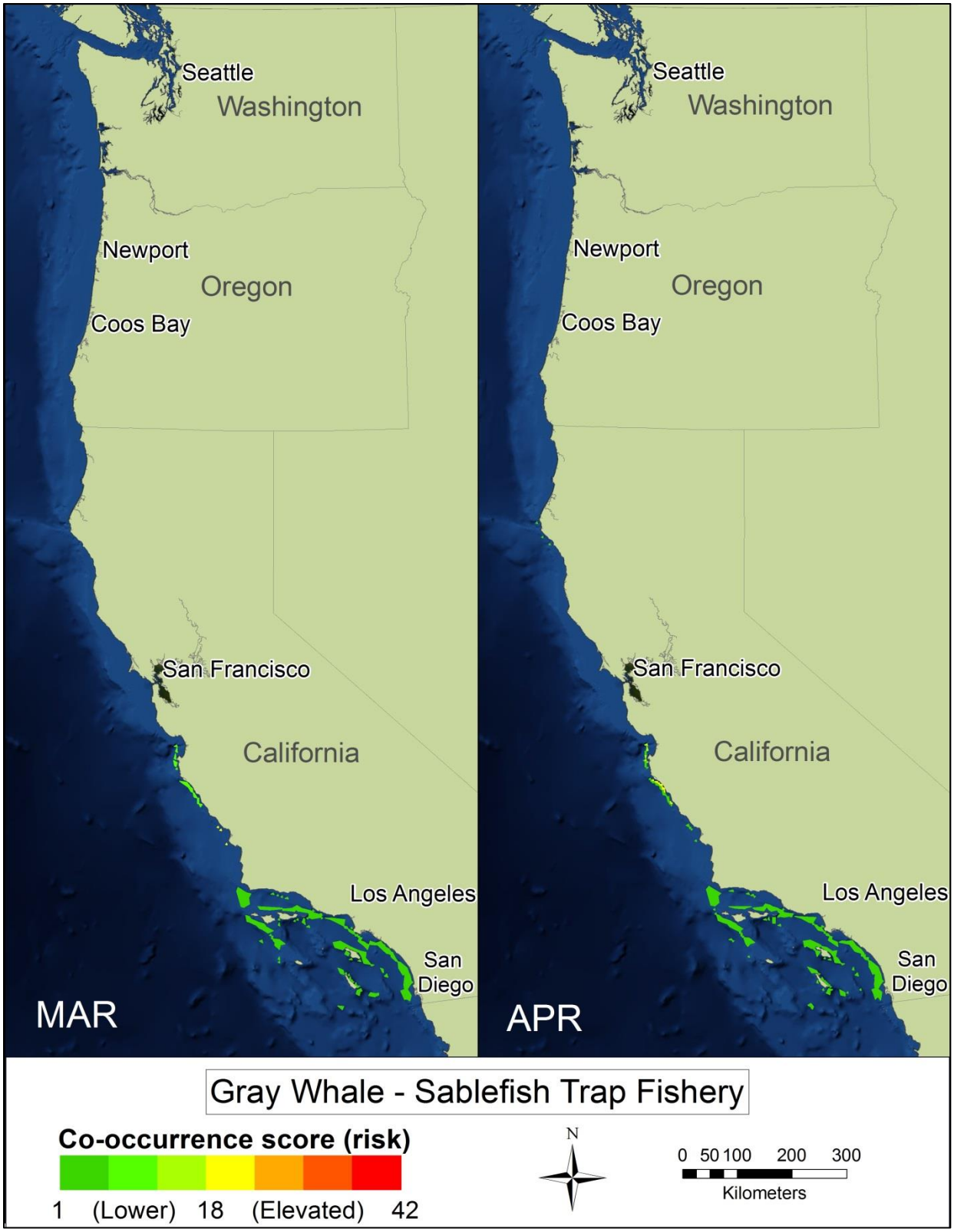

Figure 85 Co-occurrence of gray whale migration and sablefish trap effort, shown monthly for March and April. December map can be found in Figure 61.

Figure 86 Co-occurrence of gray whale migration and sablefish trap effort, shown monthly for May and June. December map can be found in Figure 61.

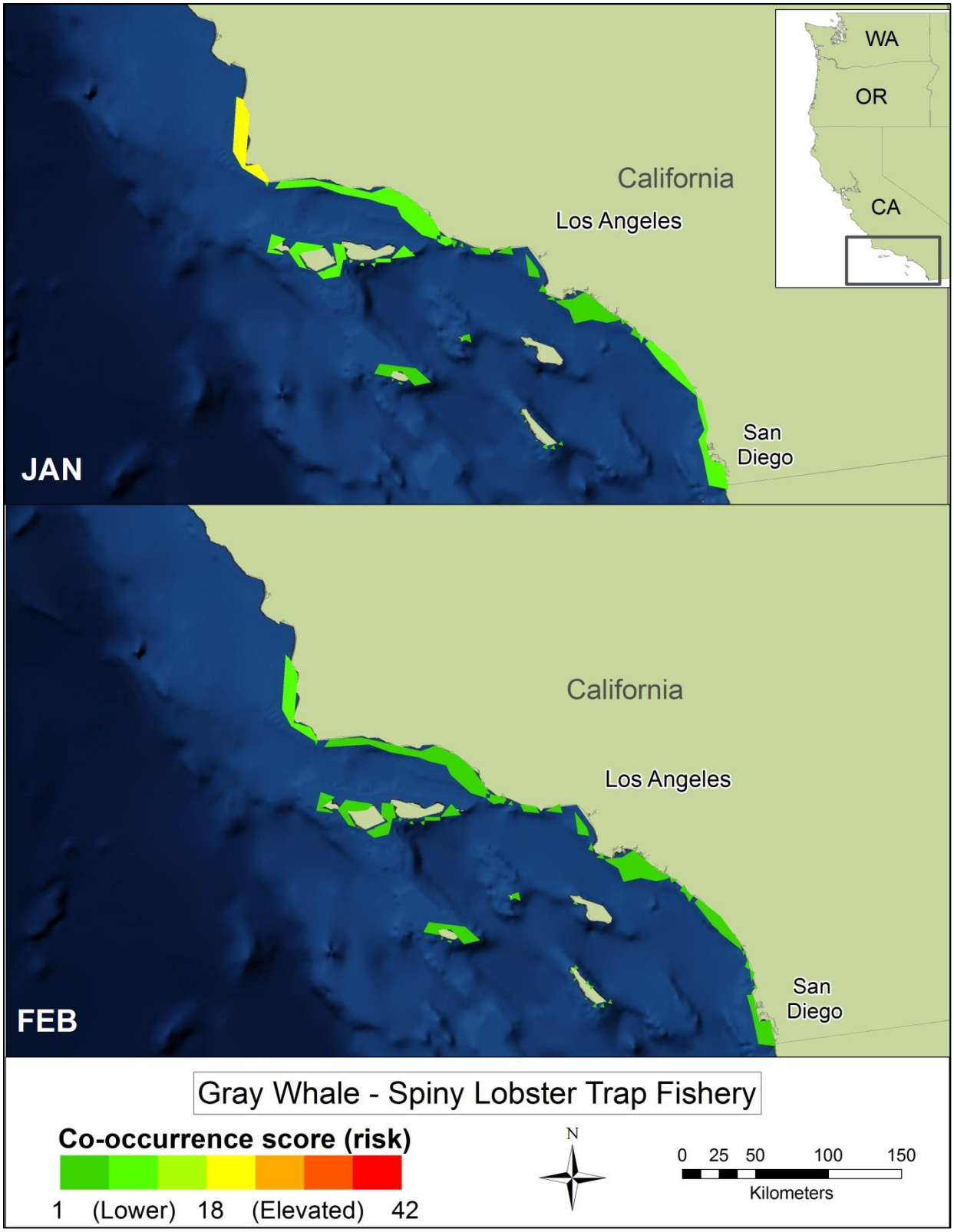

Figure 87 Co-occurrence of gray whale migration and spiny lobster trap effort, shown monthly for January and February. December map can be found in Figure 61.

Figure 88 Co-occurrence of gray whale migration and spiny lobster trap effort, shown for March. December map can be found in Figure 61. The commercial spiny lobster season is closed from April to October.

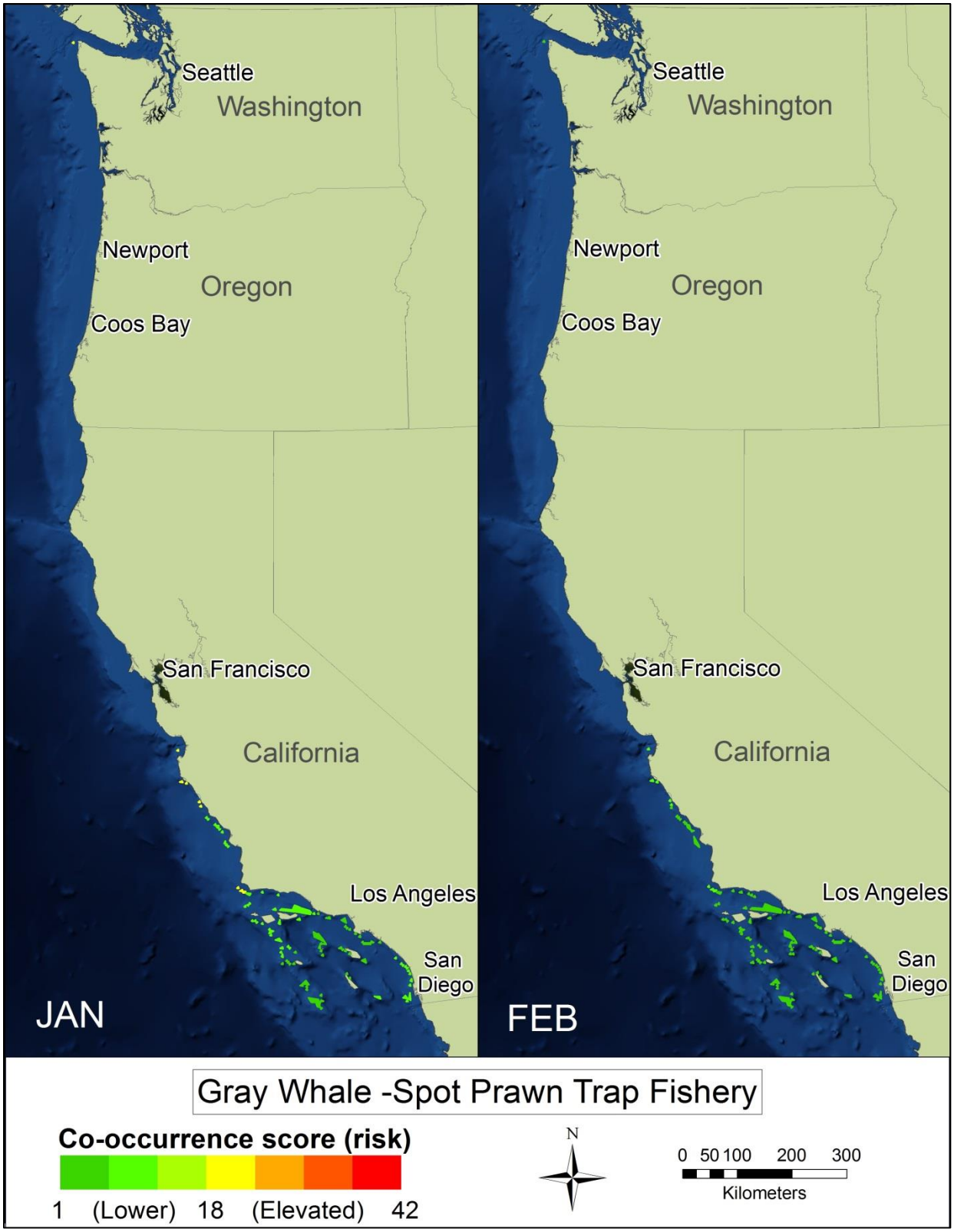

Figure 89 Co-occurrence of gray whale migration and spot prawn trap effort, shown monthly for January and February. December map can be found in Figure 61.

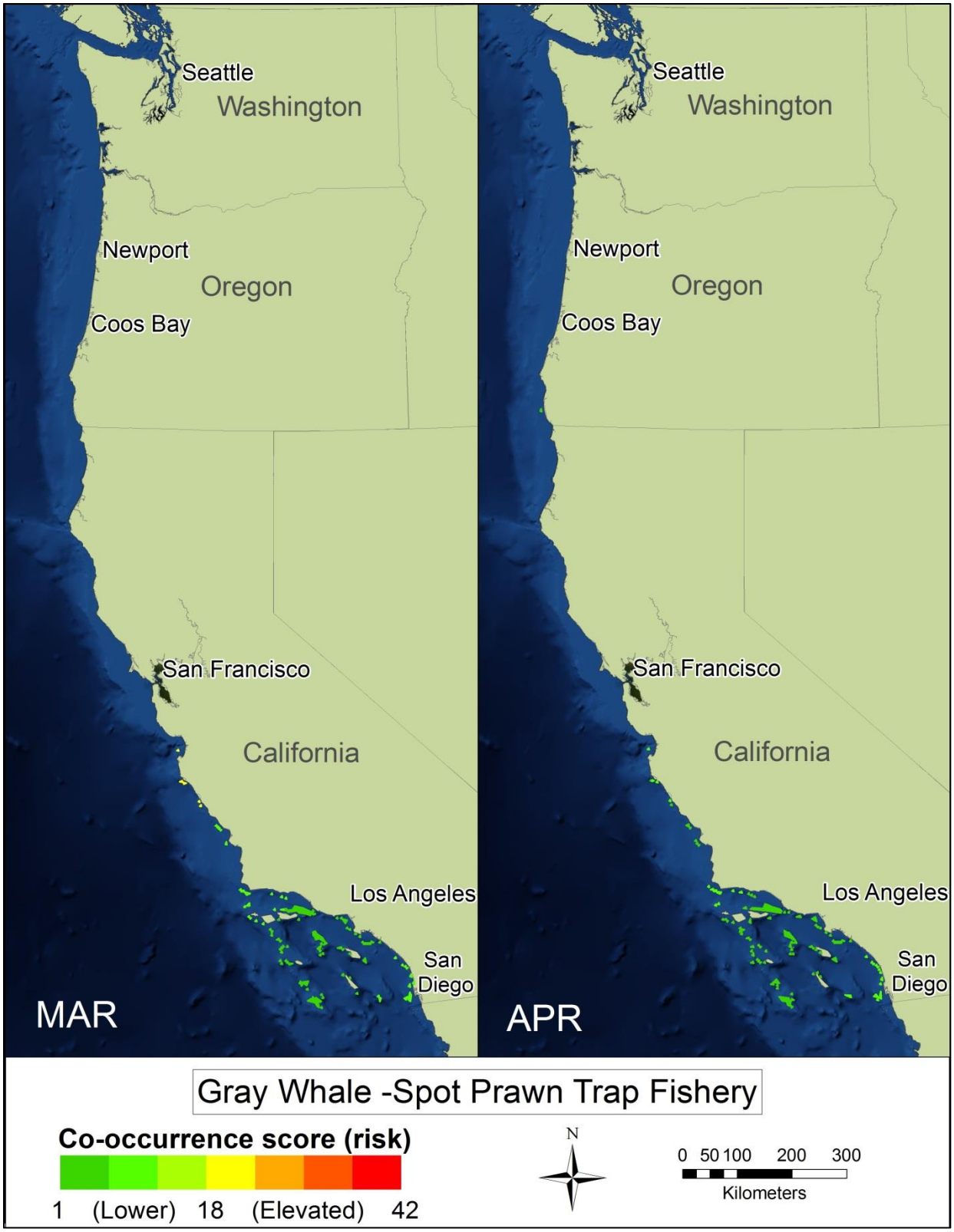

Figure 90 Co-occurrence of gray whale migration and spot prawn trap effort, shown monthly for March and April. December map can be found in Figure 61.

Figure 91 Co-occurrence of gray whale migration and spot prawn trap effort, shown monthly for May and June. There was no entanglement risk in June. December map can be found in Figure 61.

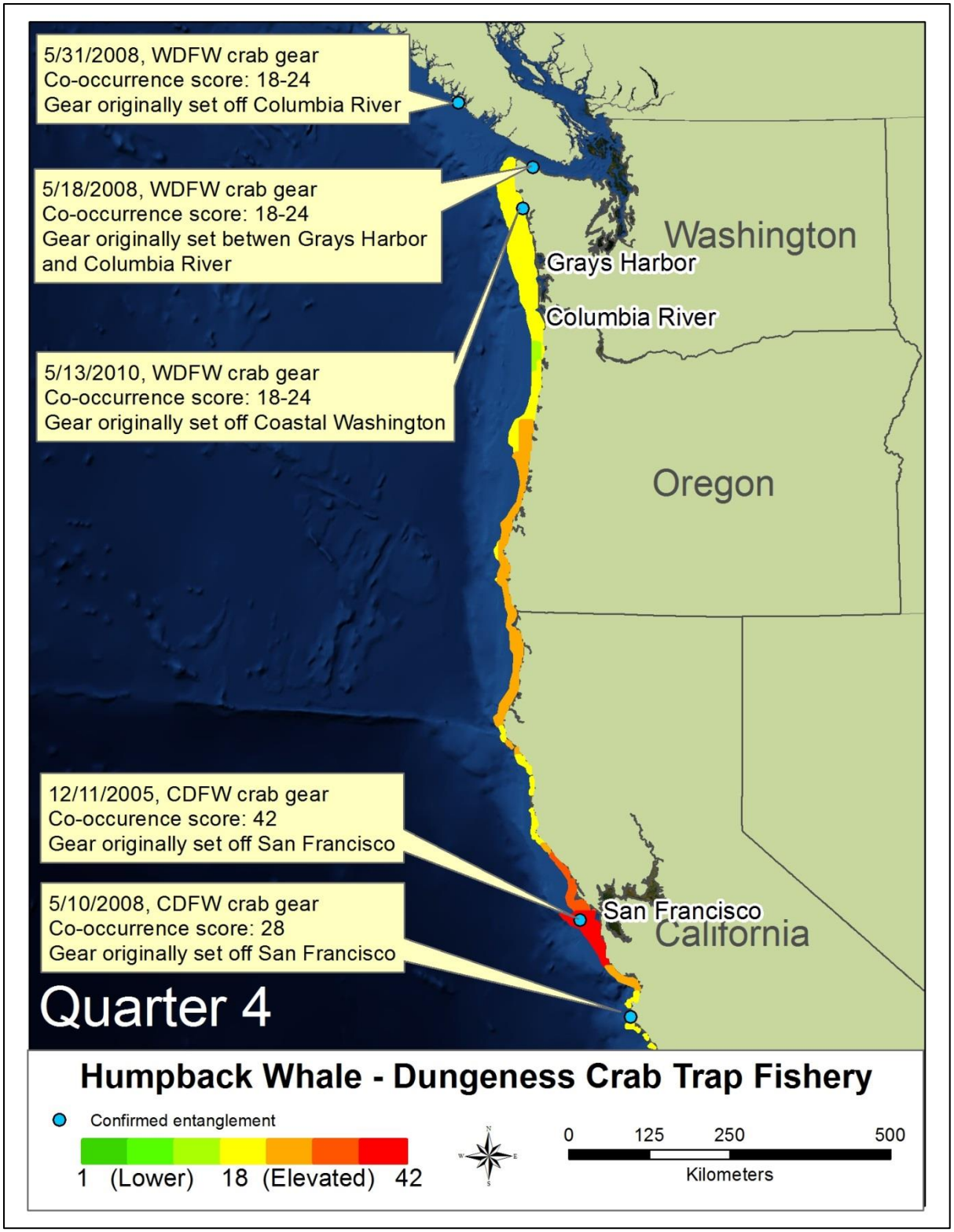

Figure 92 Comparison of co-occurrence model results with confirmed entanglements: humpback whale with Dungeness crab trap fishery in Quarter 4. The blue dots represent sighting location of confirmed humpback whale entanglements in Dungeness crab trap gear. The callout shares information about the gear including set location.

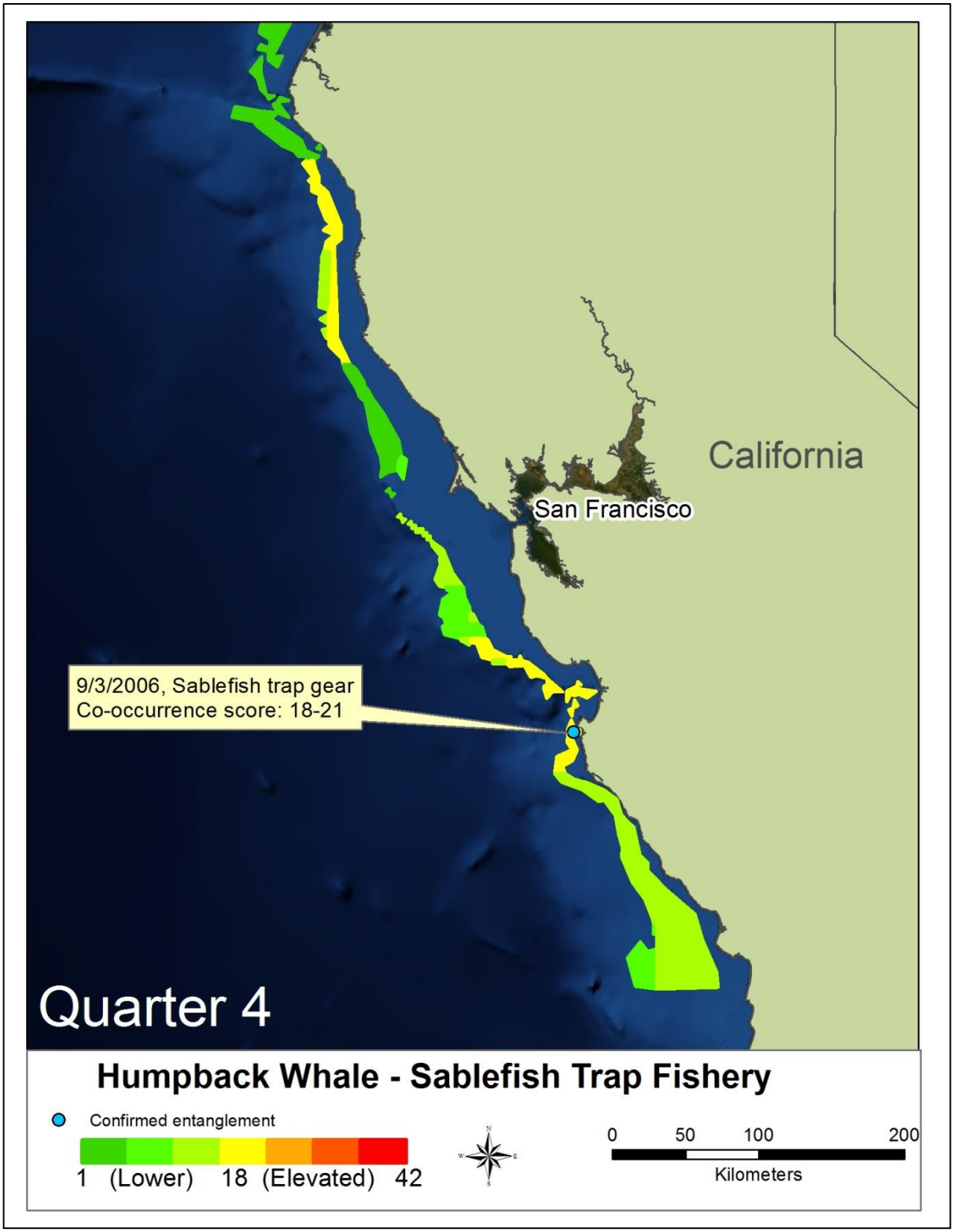

Figure 93 Comparison of co-occurrence model results with confirmed entanglements: humpback whale with sablefish trap fishery in Quarter 4. The blue dot represents the sighting location of confirmed humpback whale entanglement in sablefish trap gear. The callout shares information about the gear including set location.

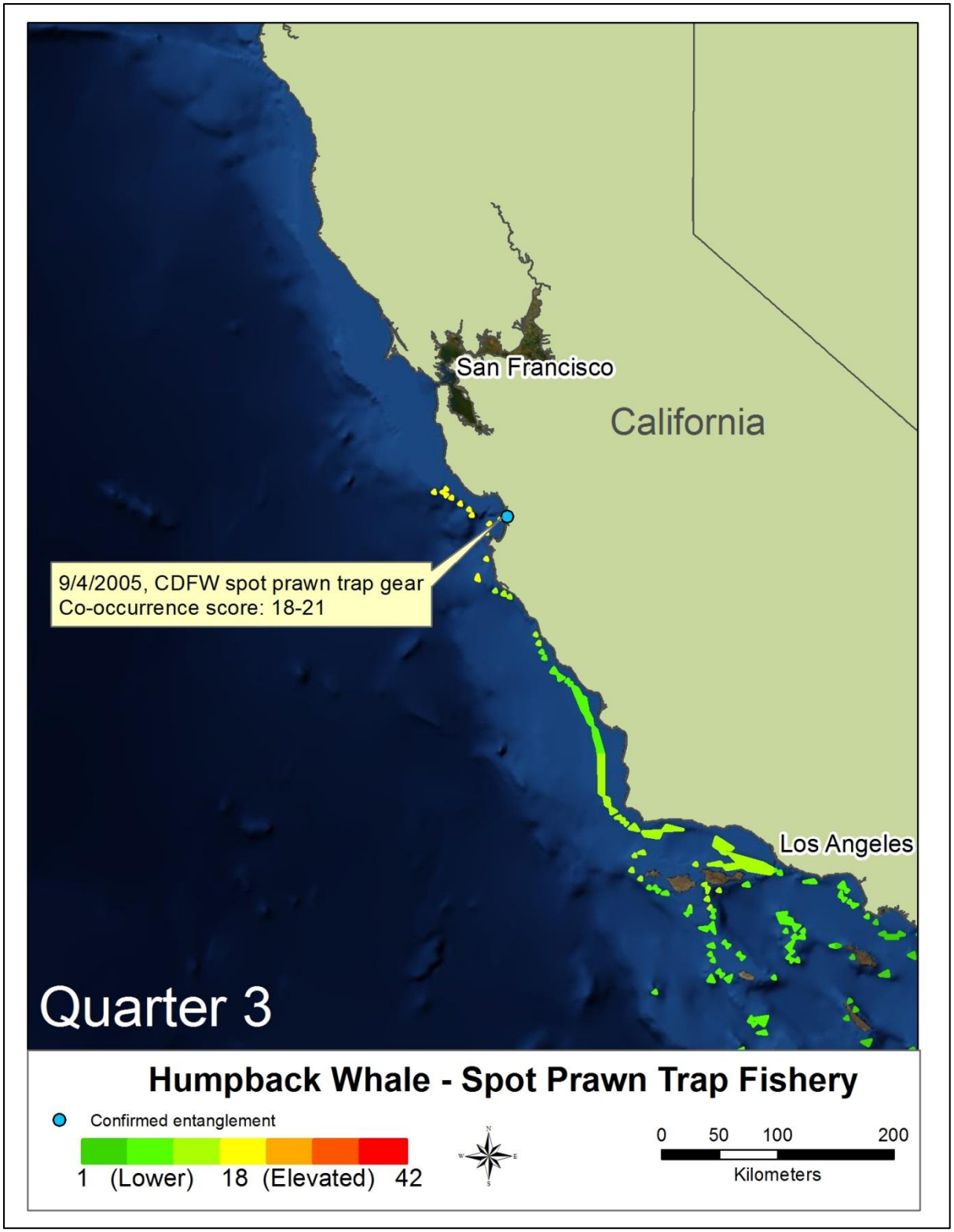

Figure 94 Comparison of co-occurrence model results with confirmed entanglements: humpback whale with spot prawn trap fishery in Quarter 3. The blue dot represents the sighting location of confirmed humpback whale entanglement in spot prawn trap gear. The callout shares information about the gear including set location.

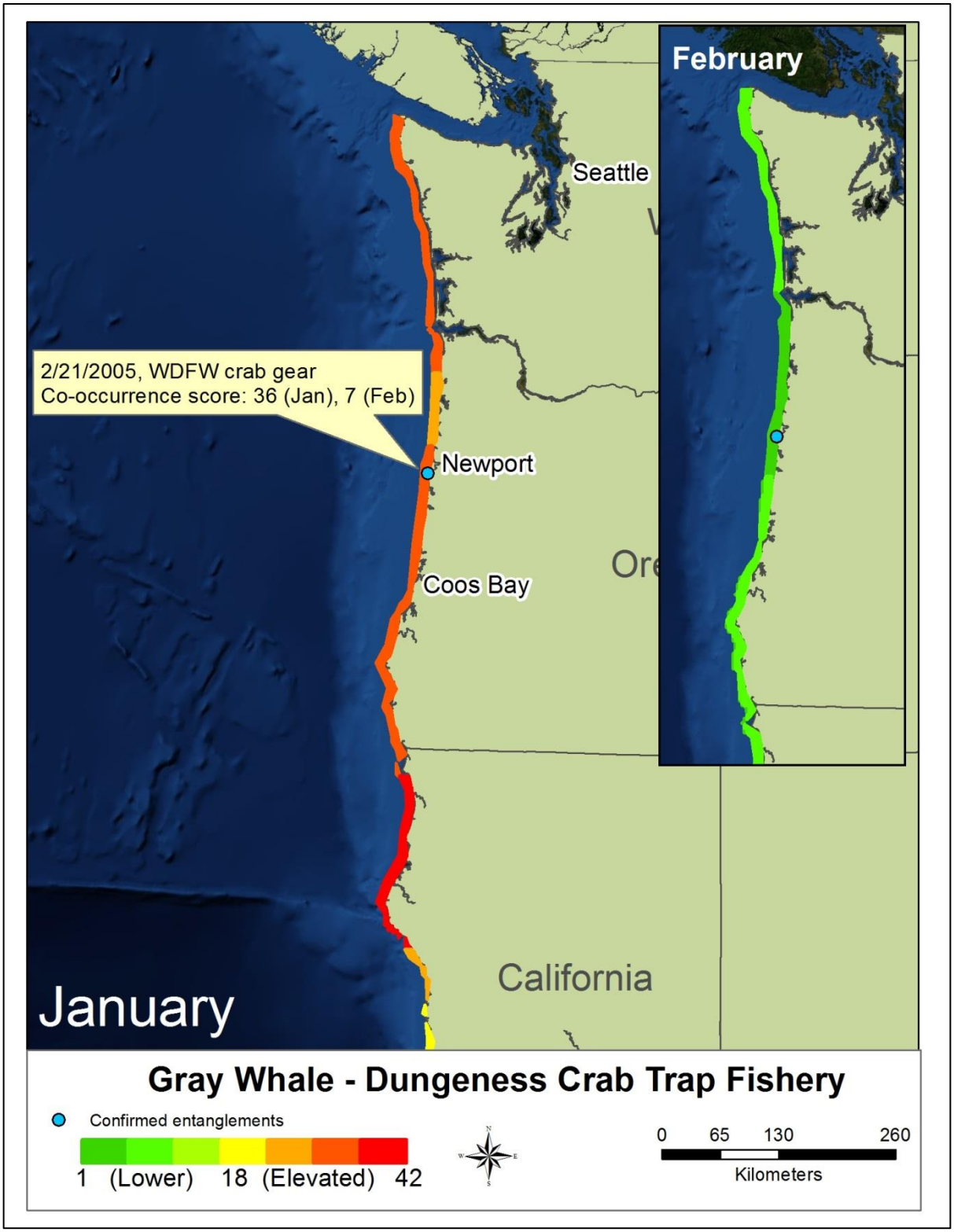

Figure 95 Comparison of co-occurrence model results with confirmed entanglements: gray whale with Dungeness trap fishery in the month of January. The blue dot represents the sighting location of confirmed gray whale entanglement in Dungeness trap gear. The callout shares information about the gear including set location.

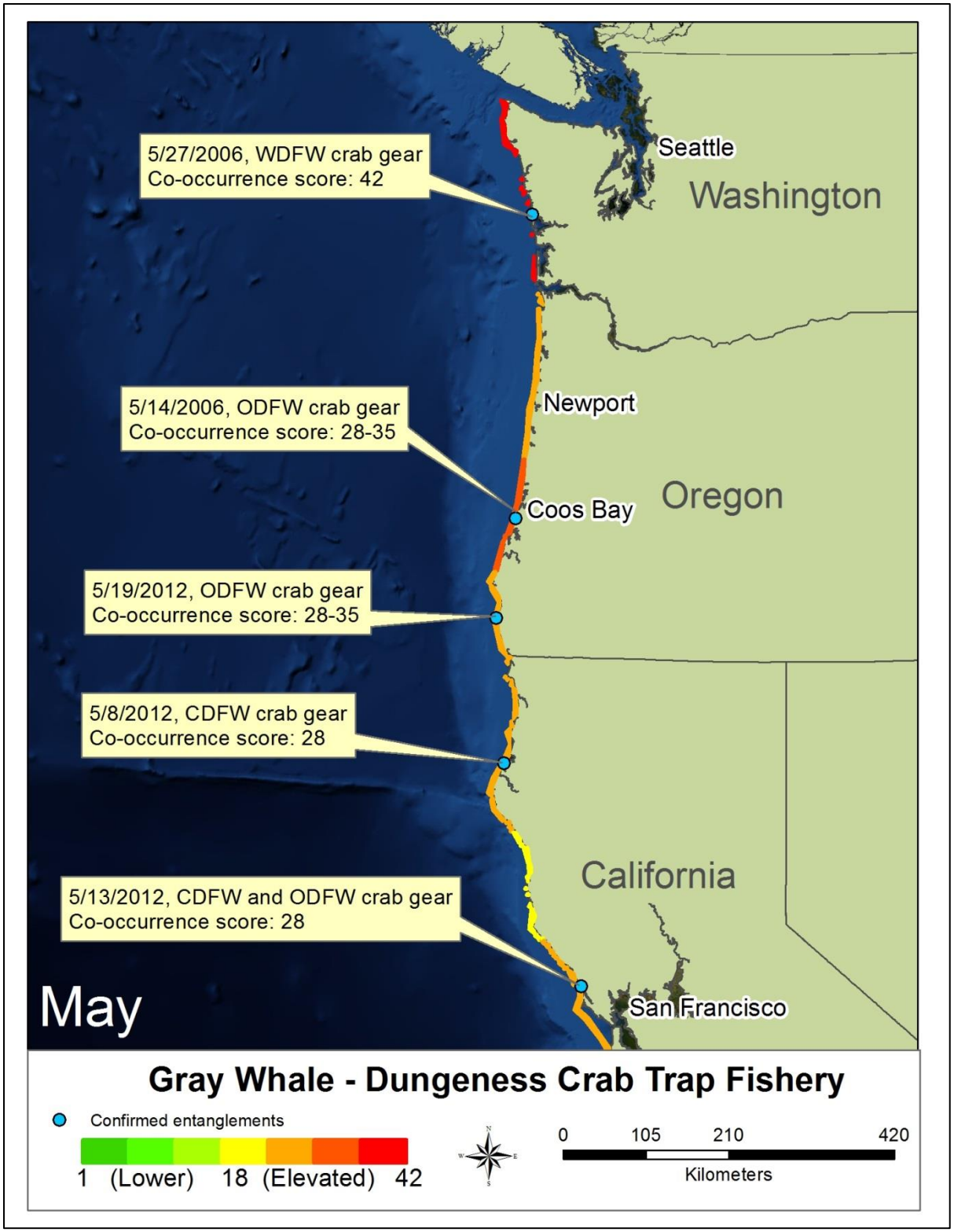

Figure 96 Comparison of co-occurrence model results with confirmed entanglements: gray whale with Dungeness crab trap fishery in the month of May. The blue dot represents the sighting location of confirmed gray whale entanglement in Dungeness crab trap gear. The callout shares information about the gear including set location.